DRAFT
ENVIRONMENTAL IMPACT REPORT

EL DORADO HILLS SPECIFIC PLAN

State Clearinghouse Number 86122912

prepared for

El Dorado County Community Development Department
Planning Division

Jones & Stokes Associates, Inc.,
Sacramento, CA

October, 1987

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ENVIRONMENTAL IMPACT REPORT
EL DORADO HILLS SPECIFIC PLAN

State Clearinghouse Number 86122912

Lead Agency:

El Dorado County
Community Development Department
Planning Division
360 Fair Lane
Placerville, CA 95667
Contact: Patty Dunn
916/626-2438

Prepared by:

Jones & Stokes Associates
1725 - 23rd Street, Suite 100
Sacramento, CA. 95816
Contact: Kim Smith/Kate Burdick
916/444-5638

Contributors:

TJKM Transportation Consultants
Donald Ballanti, Certified Consulting Meteorologist
Brown-Buntin Associates, Inc.
George A. Wheeldon & Associates
Peak & Associates, Inc.

October 1987

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Introduction

Chapter 1
Introduction

This Environmental Impact Report (EIR) has been prepared to assess the impacts of the El Dorado Hills Specific Plan (Specific Plan), pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the state CEQA Guidelines (14 California Administrative Code Section 15000 et seq.). CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This includes approval of the Specific Plan. An EIR is an informational document used in the local planning and decision-making process. It is not the purpose of the EIR to recommend either approval or denial of a project.

The Specific Plan contemplates the development of 2,184 acres for residential use, 260 acres for commercial use, 1,020 acres for open space, 370 acres for two 18-hole golf courses, 26 acres for parks, 60 acres for schools, 27 acres for a village green/community center, and 139 acres for major streets. The total number of acres within the Specific Plan is 4,086.

SCOPE OF THE EIR

The state CEQA Guidelines require preparation of an Initial Study to evaluate a project's potential effect on the environment. After reviewing the proposed project, El Dorado County planning staff prepared an Initial Study (Appendix A) to identify possible impacts. The staff determined that the following issues were of concern and should be addressed in the EIR.

- Earth
- Air
- Water
- Plant Life
- Animal Life
- Noise
- Light and Glare
- Land Use
- Natural Resources
- Population
- Housing
- Transportation/Circulation
- Public Services

- Energy
- Utilities
- Aesthetics
- Recreation
- Cultural Resources

A Notice of Preparation of this EIR was distributed by El Dorado County in December 1986. Interested agencies and individuals submitted comments concerning the scope of the EIR (Appendix B of the EIR).

The focus of the EIR is limited to specific issues and concerns identified as possibly significant in the Initial Study or in comments received on the Notice of Preparation of an EIR. The EIR is the public document used to analyze the environmental effects of a proposed project, to indicate possible ways to reduce or avoid the possible environmental damage, and to identify alternatives to the proposed project. The EIR must also disclose significant environmental impacts which cannot be avoided, short-term uses versus long-term productivity, irreversible changes, growth-inducing impacts, effects not found to be significant, and significant cumulative impacts of all past, present, and reasonably anticipated future projects.

DISCRETIONARY PERMITS AND APPROVALS NEEDED TO IMPLEMENT THE SPECIFIC PLAN

A number of permits and approvals would be necessary to implement the proposed Specific Plan, including:

- review and approval of the EIR by the El Dorado County Planning Commission and Board of Supervisors;
- certification of the EIR by the Board of Supervisors;
- review and approval of the Specific Plan by the Planning Commission and Board of Supervisors;
- adoption of the Specific Plan, amending the Area Plan, and approving the zone reclassifications by resolution of the Board of Supervisors; and
- review and approval of the Development Agreement by the Board of Supervisors.

Following these actions, El Dorado County would have to approve tentative parcel and subdivision maps, and approve detailed development plans and engineering drawings for each individual development proposal.

Several state permits would also be required to implement the Specific Plan, including:

- California Department of Transportation (Caltrans) review and approval of the proposed Silva Valley Parkway Interchange. Environmental impacts of the interchange are addressed in a separate document currently being prepared for Caltrans and the Federal Highways Administration; and

- California Department of Fish and Game (DFG) 1601-03 Permit (Stream or Lake Alteration Agreement) prior to modifying or working in the creeks.

Section 15182 of the state CEQA Guidelines states that no EIR or Negative Declaration need be prepared for residential projects undertaken pursuant to and in conformity with a Specific Plan. Residential projects covered by this section include, but are not limited to, land subdivisions, zoning changes, and residential planned unit developments. This exemption from additional environmental review may not apply if El Dorado County needs to prepare a subsequent EIR or a supplement to an EIR on the Specific Plan.

HOW TO USE THIS REPORT

The content and format of this EIR are designed to meet the requirements of CEQA, the state CEQA Guidelines, and the El Dorado County Environmental Review Guidelines.

- Chapter 1, "Introduction," gives a brief overview of the project and EIR.

- Chapter 2, "Project Description," describes the project as proposed by the applicant.

- Chapter 3, "Summary of Findings," presents a brief summary of the project, identifies significant impacts and mitigation measures, identifies known areas of controversy, and issues to be resolved.

- Chapters 4-16 are each devoted to a single impact topic. Within each topic, relevant data about the environmental setting are presented. The impacts of the Specific Plan are identified and evaluated in terms of significance, and mitigation measures are suggested. Actual determination of which mitigation measures will be required and implemented is the responsibility of El Dorado County.

- Chapter 17, "Cumulative Impacts," identifies the cumulative impacts of development in El Dorado County based on past, present, and reasonably anticipated future projects as known in March 1987.

- Chapter 18, "Bibliography," identifies the documents and individuals consulted in preparing this EIR. Finally,

- Chapter 19, "Report Preparation," lists those individuals and firms involved in preparing this EIR.

- Technical appendices are included at the end of the report.

IMPLEMENTATION OF THE EIR

The proposed Specific Plan could generate a wide range of significant and potentially significant impacts. This EIR has identified extensive mitigations to reduce these impacts to a less-than-significant level. In order to ensure that the mitigations are implemented, the county may need to establish a monitoring program which would consist of review of tentative maps, conditions of use permits, and review of construction practices. Consideration of a monitoring program will be an important aspect of project review.

Project Description

Chapter 2
Project Description

Project Location

The Specific Plan is a long-range planning document for a 4,086-acre area (Plan Area) located in the community of El Dorado Hills in western El Dorado County. The Plan Area is approximately 23 miles east of Sacramento, 108 miles east of San Francisco, and 72 miles west of Lake Tahoe (Figure 2-1). The Plan Area is generally bounded by U. S. Highway 50 and White Rock Road on the south, El Dorado Hills Boulevard on the west, Green Valley Road on the north, and Bass Lake Road on the east (Figure 2-2).

Plan Area Description

The Plan Area consists of rolling land located in the foothills of the Sierra Nevada Mountains at elevations ranging from 600 feet to 1,200 feet above sea level. The majority of the Plan Area is undeveloped and is used for cattle grazing. Several residential structures are located in the southern and central portion of the Plan Area. A cemetery is also situated south of U. S. Highway 50 just west of White Rock Road. A major Pacific Gas and Electric (PGandE)/Sacramento Municipal Utility District (SMUD) power transmission line corridor crosses the northern portion of the Plan Area.

The Plan Area is comprised of 3,788 acres owned by El Dorado Hills Investors, Ltd. (EDHI) and an additional 987 acres owned by individuals or companies other than EDHI.

History of the Plan Area

Until the late 1950s, the El Dorado Hills area was comprised of a series of dry land cattle ranches. Several factors triggered the inception and development of El Dorado Hills in the 1960s. Most important was the industrial boom in eastern Sacramento County in the late 1950s caused by expanding companies such as Aerojet General and McDonnell-Douglas. Their government defense contracts spurred a demand for residential housing in the area.

In response to this need, Sacramento developer Allan Lindsey announced the first phase of his proposed new development, El Dorado Hills, in 1960. This project, a planned "city"

EL DORADO HILLS

EL DORADO COUNTY, CA

VICINITY MAP

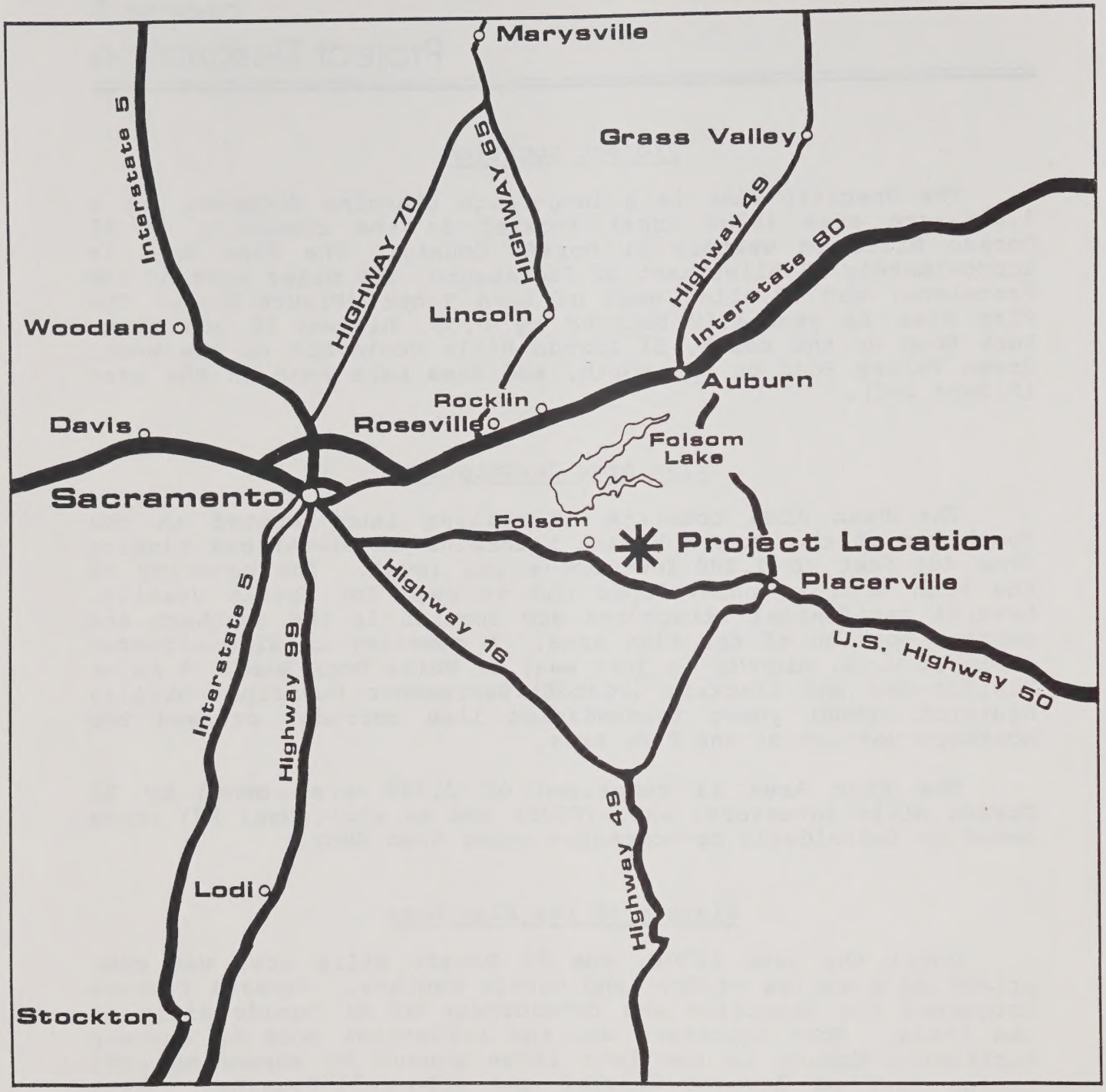


FIGURE 2-1

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

EL DORADO HILLS

EL DORADO COUNTY, CA

PROJECT LOCATION

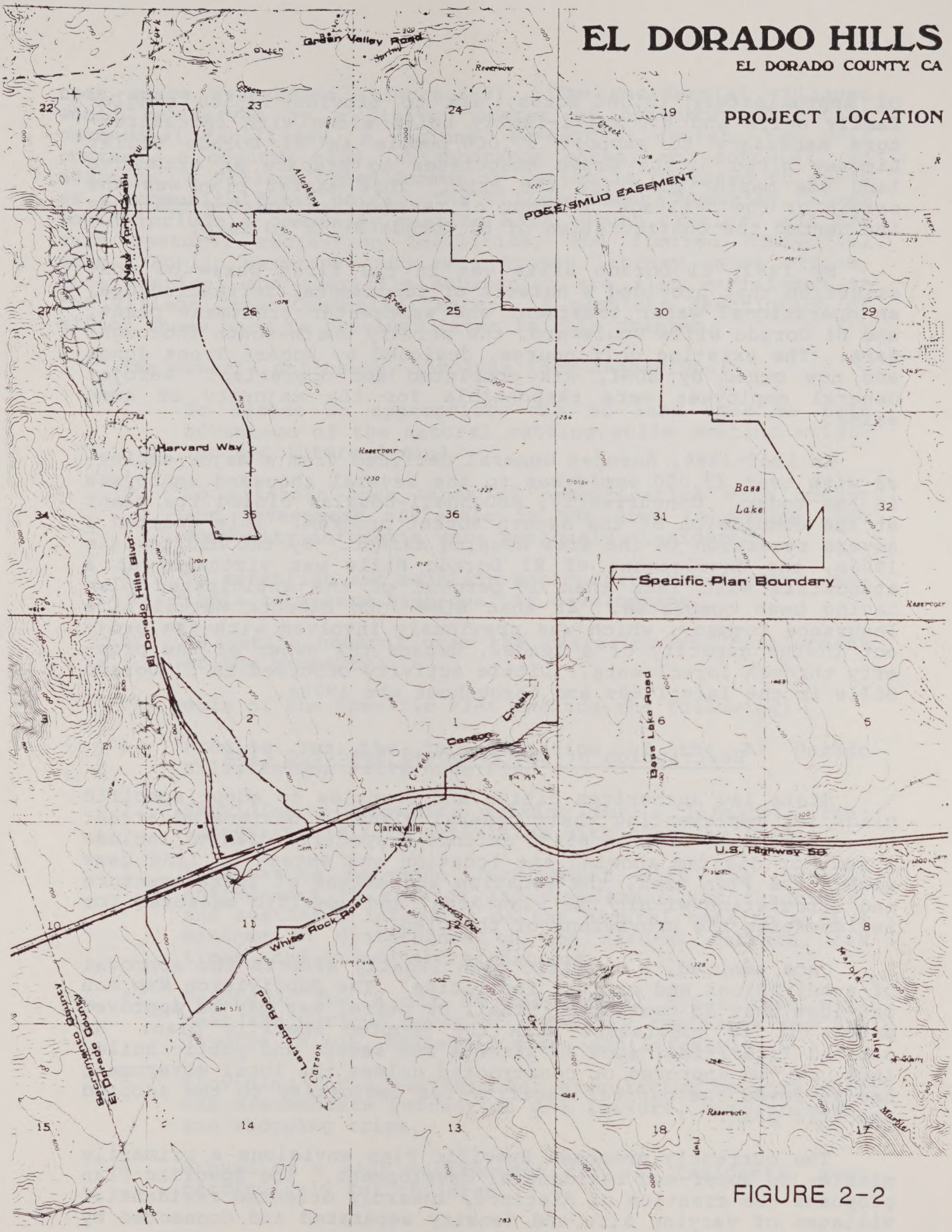


FIGURE 2-2

Owner

El Dorado Hills Investors, Ltd

3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner

Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

of approximately 10,000 acres, was to provide 15,500 single-family units and 650 multi-family units along with infrastructure necessary to support 57,000 people in El Dorado Hills. Lindsey hired Victor Gruen Associates to prepare an extensive land use master plan for the area. This master plan was the origin of the "village" concept of residential housing that has influenced the configuration of El Dorado Hills to date.

By 1963, El Dorado Hills was in the first phase of construction that provided a network of fundamental infrastructure, an operational water treatment and wastewater treatment plant, and El Dorado Hills Boulevard, the primary north-south thoroughfare. The existing golf course, designed by Robert Trent Jones and now owned by EDHI, was completed and operating. Aerojet General employees were responsible for the majority of home sales.

In 1965-1966, Aerojet General declined from a major employer with over 23,000 employees to the several thousand employees it has today. Concurrently, McDonnell-Douglas closed its plant at the conclusion of the Saturn Rocket program. This created a severe recession in the area housing market. By the mid to late 1960s, the development of El Dorado Hills was virtually at a standstill with less than 10 percent of the anticipated plan having been completed. At that time John Hancock Mutual Life Insurance Company, which was previously involved with the project in the capacity of a lender, became the owner of the property through foreclosure. Little activity occurred in El Dorado Hills in the late 1960s and throughout the 1970s.

Description of the Proposed Specific Plan

State law authorizes cities and counties to adopt specific plans for implementing their general plans in designated areas. Government Code Section 65451 defines a specific plan to include a text or diagram showing the location and extent of land uses within the Plan Area, the location and extent of infrastructure and circulation within the Plan Area, and specific measures for implementing the provisions of the plan.

Once adopted, a specific plan legally affects the approval of subdivisions and capital facilities. The Subdivision Map Act provides that no tentative, final, or parcel map may be approved unless it is consistent with the adopted specific plan. No capital facilities, such as streets and sewers and public buildings, may be approved or constructed unless the local government has reviewed the capital facility for conformity to the adopted specific plan.

The currently proposed Specific Plan envisions a primarily middle- to upper-end residential development. The Specific Plan proposes the creation of distinct, inwardly oriented residential villages of varying size and density separated and connected by

open space greenbelts (Figure 2-3). The residential villages would be served by a limited number of neighborhood retail commercial facilities, a regional commercial center, two golf courses, a country club, neighborhood parks, and schools. In addition, a Village Green/Community Center is proposed to serve as a community focal point. The Village Green/Community Center would include a community meeting hall, youth, senior, and day care centers, recreation facilities, and limited commercial uses. Public services such as a branch library, post office, fire station, and sheriff's substation are also envisioned at the Village Green/Community Center. A complete description of all of these uses is provided later in this chapter.

The owner's philosophy involves four objectives:

1. To define an appropriate mix of land uses to take advantage of the natural setting while meeting existing and future demand.

2. To maintain open lines of communication with county and government officials in the area to ensure that community interests were seriously considered.

3. To establish and maintain appropriate development controls to ensure high-quality development.

4. To retain control over the character and development of the property.

The goals of the Specific Plan include the following:

1. Provide for the implementation of the El Dorado Hills/Salmon Falls Area Plan.

2. Providing a community setting for a lifestyle that integrates leisure activities with everyday life.

3. Integrating man-made development with the natural environment to enhance and complement the functional and aesthetic integrity of the natural setting with a minimum of disturbance to the natural terrain, oak trees, and other natural habitat.

4. Providing for a mix of residential types that will meet the various needs of community residents who are diverse in age, household size, and lifestyle.

5. Providing for a nonvehicular circulation network that can accommodate recreation and leisure, home-to-work, and shopping trips.

6. Providing a safe environment for all residents, most particularly for children.

7. Providing adequate public facilities and services necessary to support the residents and businesses in the community.

8. Providing for convenient commercial services and opportunities for cultural and leisure events.

9. Providing an aesthetic environment for public spaces, private spaces, and the natural environment.

Proposed Land Uses

Land uses as proposed by the Specific Plan are summarized in Table 2-1 and are shown in Figure 2-3. A Specific Plan for a project of this magnitude is, necessarily, a document which is evolutionary in nature. The Specific Plan and the EIR were prepared simultaneously to ensure full integration of the environmental factors into the Specific Plan text and policies. Because the Specific Plan attempts to respond to the informational needs of the County and the applicant it has undergone several changes since its first draft. These changes are the result of the applicant's efforts to make the document progressively more responsive to the concerns of the County and the issues identified during the environmental review process. Therefore, the Specific Plan text that was used as a basis for initial review of the project has been progressively refined, resulting in a reduction in the number of units proposed for the site.

The EIR analysis requires that a project description be established upon which to base the various section evaluations. To fulfill the needs of the EIR consultant, the project description was established as shown in Table 2-1. During subsequent EIR and County review, the project description has been refined as shown on Table 2-1A. Although the project residential units have been reduced, the original numbers have been retained to provide a "worst-case" analysis and to provide the applicant and decision makers some latitude in their review of the project.

Residential Land Uses. Approximately 53 percent of the Plan Area is proposed for residential use, which would allow for the development of 7,346 dwelling units. Considering the entire Plan Area, an average residential density of approximately 1.8 dwelling units per acre would result.

A broad spectrum of residential-sized lots would be offered, ranging from 4-acre estates to multi-family units at 12 units per acre. Densities for the non-EDHI parcels (298 acres) in Villages P and Q, are based on current zoning or adjacent proposed density designations per county staff direction. Residential villages vary in design and character. For example, Villages E, F, and I are oriented around the golf

Table 2-1. Proposed Land Uses[a]

Land Use	Acreage	Percent of Plan Area	Dwelling Units
Residential	2,184	53.4	7,346
Commercial[b]	260	6.3	
Open Space[c]	1,020	25.0	
Golf courses	370	9.1	
Park land	26	0.6	
Schools[d]	60	1.5	
Village Green/ Community Center	27	0.7	
Major streets	139	3.4	
TOTALS	4,086	100.0	7,346

Source: Wade pers. comm., March 23, 1987.

[a] Note: These numbers reflect the original Specific Plan project description which was reviewed by this consultant. This review resulted in minor revisions to the project description. Therefore, these numbers represent a "worst case analysis" and have been used throughout the report. The numbers which resulted from revision of the Specific Plan are shown on Table 2-1A.

[b] Does not include commercial space allocated within Village Green/Community Center but does include Village J commercial.

[c] Includes Villages R and W. Does not include residential open space.

[d] Park land and school acreage may be reduced if joint use of sites occurs.

Table 2-1A. Summary of Residential Use by Development Neighborhood (Updated[1])

Specific Plan Area	Dwelling Units	Gross Acres	Gross Density/AC	Net Acres	Net/du/AC
North Uplands Golf Course Neighborhood					
Village H	362			160	
Village I	699			134	
Village J	365			162	
Village K	458			236	
Village L	56			25	
Village M	37			148	
Subtotal	1,977	1,483	1.33	865	2.29
South Uplands Golf Course Neighborhood					
Village C	482			252	
Village E	282			109	
Village F	553			107	
Village G	905			192	
Subtotal	2,222	1,026	2.17	660	3.37
Valley Floor Neighborhood					
Village A	606			151	
Village B	212			53	
Village D	1,051			250	
Village P	265			53	
Village O	110			64	
Village V	10			7	
Subtotal	2,254	1,108	2.03	578	3.90
Residential Total	6,453	3,617	2.03	2,103	3.07 (Net)
Commercial Neighborhood					
Village T	0	126		126	
Village U	0	130		130	
Subtotal	0	256	0.0	256	0.00
Miscellaneous					
Village Green	0			27	
Village R	0			157	
Village W	0			13	
Circulation	0			139	
Schools	0			60	
Golf Course	0			370	
Open Space	0			808	
Grand Total	6,453	3,933	1.64	3,933	1.64 (Gross)

1 Based on revised Specific Plan in Figure 2-3.

courses. Generally, parcel sizes in the northern villages are large to provide a transition to low-density residential areas north of the Plan Area.

Residential types vary as well. Single-family detached residences are the predominant residence type. Attached units (patio homes and townhomes) are also planned and would be located in cluster patterns adjacent to the golf courses. Some villages would consist of a single residential type while other villages propose several types (See Figures 2-4, 2-5, and 2-6).

For the purposes of this report, densities over 5 units per acre are termed multi-family. The Specific Plan proposes 1,658 multi-family dwelling units (up to 12.0 dwelling units per acre) and the remaining 5,688 as single-family dwellings. Residential types and densities by village are shown in Figure 2-7.

Commercial Land Uses. Approximately 260 acres of land is designated for commercial use. Most of that land is included in Villages T and U located south of U. S. Highway 50 at El Dorado Hills Boulevard. These two villages provide 256 acres for commercial use and could include a hotel/convention center, restaurants, shopping center with department stores and shops, gasoline service station, business/professional offices, automotive sales and service, and medical facilities.

Four- and 6-acre commercial sites are proposed in the Bass Lake area in Village J. Types of uses to be included in this area include, but are not necessarily limited to: grocery store, drug store, variety store, restaurant, and cleaners. This area would constitute the primary convenience center for the uplands portion of the Plan Area primarily intended to serve the frequently recurring needs of the villages that are most distant from the other planned and existing commercial facilities.

Village Green/Community Center. The Specific Plan designates a clearly defined Village Green/Community Center to provide a special focus for the community life (see Figures 2-8 and 2-9). The Village Green/Community Center would be located in a highly visible, central location at the intersection of Silva Valley Parkway and Country Club Drive. This location would be readily accessible from the new planned residential villages in the Plan Area, and is also easily accessible from the existing villages in El Dorado Hills. It is intended that the Village Green/Community Center serve as the focal point of all of the El Dorado Hills community and, as such, reinforce the original villages concept.

Finally, a limited quantity and type of commercial use would be allowed in the Village Green/Community Center. These commercial uses would be carefully controlled in terms of type and design in order to maintain a low profile. Commercial uses are intended to be secondary in importance and number to the

community service and recreation uses. Limited commercial uses would include a bakery, cafe, bank, and a dry cleaning establishment (pickup and delivery only). Some space may be provided for medical offices. A sales and development information office for the Plan Area would be an interim use.

Land uses proposed for the Village Green/Community Center are as follows:

Park land (children's play area, tennis courts, hardcourt, amphitheater, picnic area, lake)		10.8 acres
Village Green/Community Center		
The Green	2.00 acres	
Buildings	2.75 acres	
Parking, plaza, circulation	11.45 acres	
Subtotal		16.2 acres
TOTAL		27.0 acres

Open Space and Golf Courses. A substantial commitment of approximately 1,390 acres of open space is incorporated into the Specific Plan. Generally, each residential village would be bounded by natural open space, golf course, or residential open space (see Figure 2-10).

Natural Open Space. Approximately 1,020 acres within the Plan Area would be left in a natural condition. These areas are generally provided in large sections with few breaks, and occur predominantly in areas that are steep and visually prominent and in areas with dense tree cover.

Uses permitted within the natural open space would be limited to passive recreation. Modification of the natural vegetation and terrain would be limited to that required for trail construction, slope maintenance, erosion control, and fire protection. Specific management options are described in the Specific Plan.

The natural open space will be initially owned and managed by EDHI. Ultimately, ownership and management responsibilities will be relinquished to another entity, such as a master homeowner's association or a County Service Area.

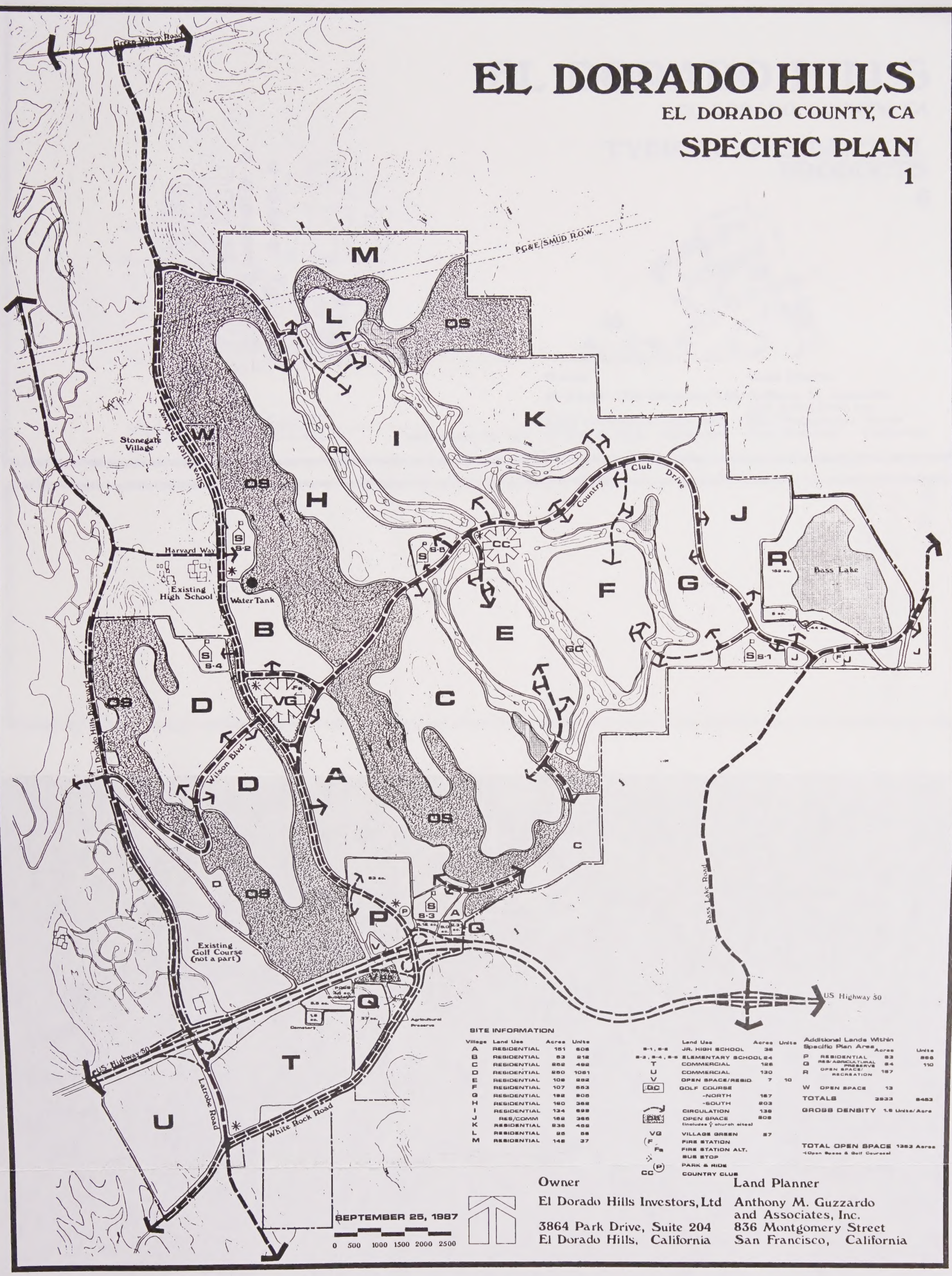
Golf Courses. Approximately 370 acres are to be reserved for two 18-hole championship golf courses. In addition to serving the recreational needs of a certain segment of the community, the design of the courses provides a substantial open space greenbelt throughout a large portion of the Plan Area. The golf course, generally located within low-lying areas, would

EL DORADO HILLS

EL DORADO COUNTY, CA

SPECIFIC PLAN

1



SITE INFORMATION

Village	Land Use	Acres	Units
A	RESIDENTIAL	151	605
B	RESIDENTIAL	53	212
C	RESIDENTIAL	252	492
D	RESIDENTIAL	250	1061
E	RESIDENTIAL	108	252
F	RESIDENTIAL	107	553
G	RESIDENTIAL	192	505
H	RESIDENTIAL	160	362
I	RESIDENTIAL	134	592
J	RES/COMM	162	365
K	RESIDENTIAL	236	455
L	RESIDENTIAL	95	58
M	RESIDENTIAL	146	37

	Land Use	Acres	Units
S-1, S-6	JR. HIGH SCHOOL	35	
S-2, S-4, S-5	ELEMENTARY SCHOOL	24	
T	COMMERCIAL	126	
U	COMMERCIAL	130	
V	OPEN SPACE/RESID.	7	10
GC	GOLF COURSE		
	-NORTH	167	
	-SOUTH	203	
	CIRCULATION	139	
OS	OPEN SPACE (includes 7 church sites)	805	
VG	VILLAGE GREEN	27	
F	FIRE STATION		
Fa	FIRE STATION ALT.		
	BUS STOP		
P	PARK & RIDE		
CC	COUNTRY CLUB		

Additional Lands Within Specific Plan Area		Acres	Units
P	RESIDENTIAL	83	866
Q	RES/AGRICULTURAL PRESERVE	64	110
R	OPEN SPACE/ RECREATION	167	
W	OPEN SPACE	13	
TOTALS		3933	8453
GROSS DENSITY		1.6 Units/Acre	

TOTAL OPEN SPACE 1352 Acres
(Open Space & Golf Courses)

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 2-3.
SPECIFIC PLAN

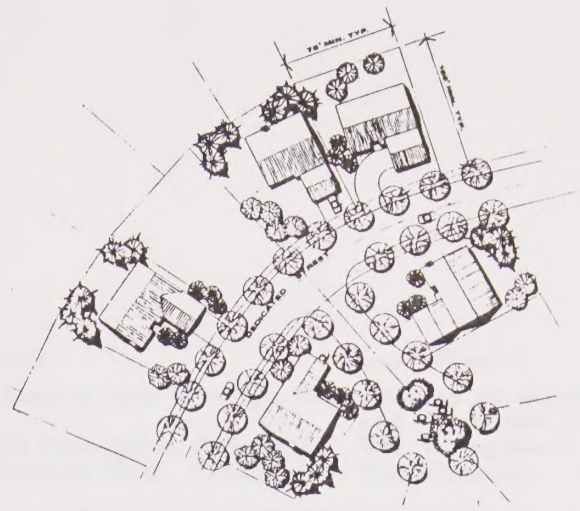
EL DORADO HILLS

EL DORADO COUNTY, CA

TYPICAL RESIDENTIAL PRODUCTS

6

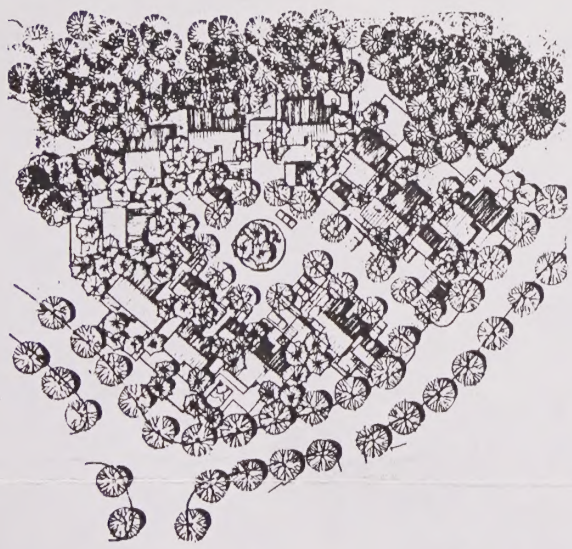
SFD SINGLE FAMILY DETACHED 6,500 S.F.
65X100' 4 d.u.s/ac.



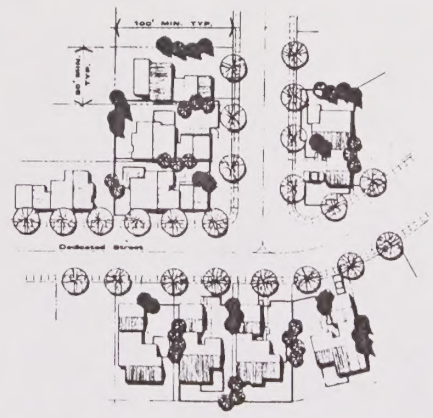
SFD SINGLE FAMILY DETACHED 7,500 S.F.
75X100' 4 d.u.s/ac.

AGT ATTACHED TOWNHOME CLUSTER ON GOLF COURSE
7d.u./ac.

AGT ATTACHED TOWNHOME ON GOLF COURSE
7d.u.s/ac.



PH PATIO HOME CLUSTER
50 X 100' TYP. 4.5 d.u.s/ac.



PH PATIO HOME (FEE LOT) 5,000 S.F.
50 X 100' 4.5 d.u.s/ac.

SEPTEMBER 25, 1987

Owner
El Dorado Hills Investors, Ltd.
3864 Park Drive, Suite 204
El Dorado Hills, California

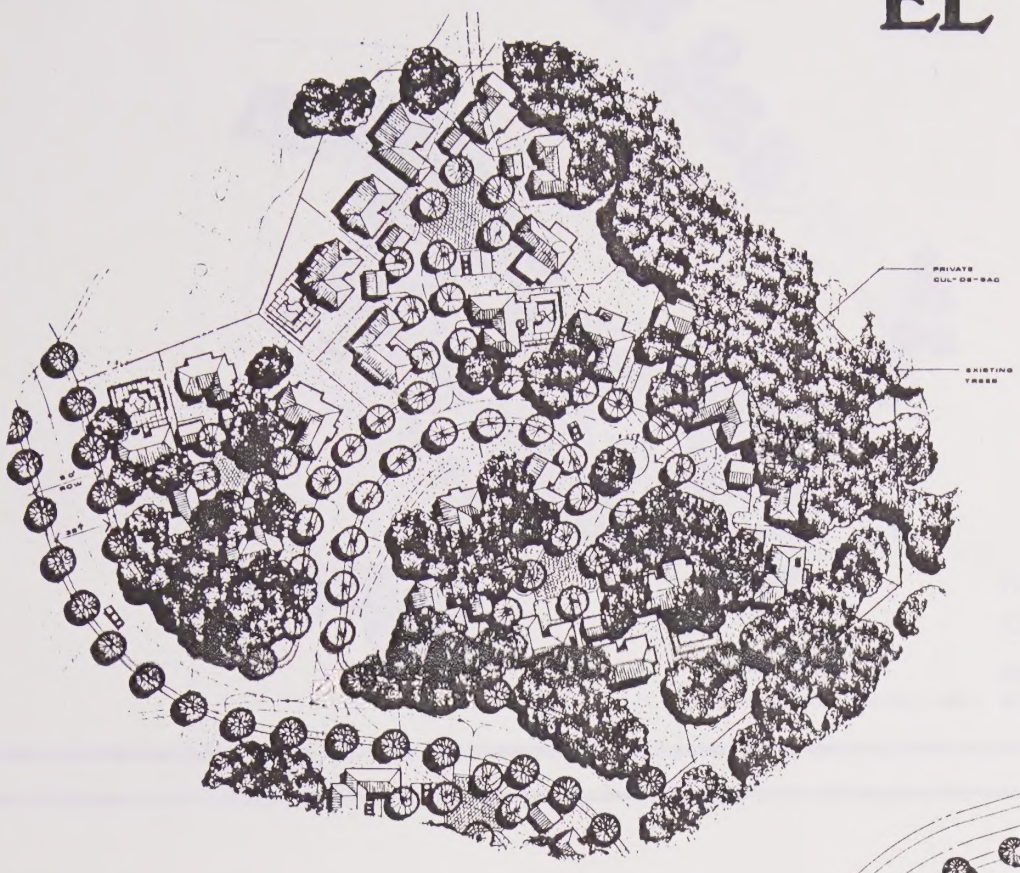
Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco California

FIGURE 2-4.
TYPICAL RESIDENTIAL PRODUCTS

EL DORADO HILLS

EL DORADO COUNTY, CA

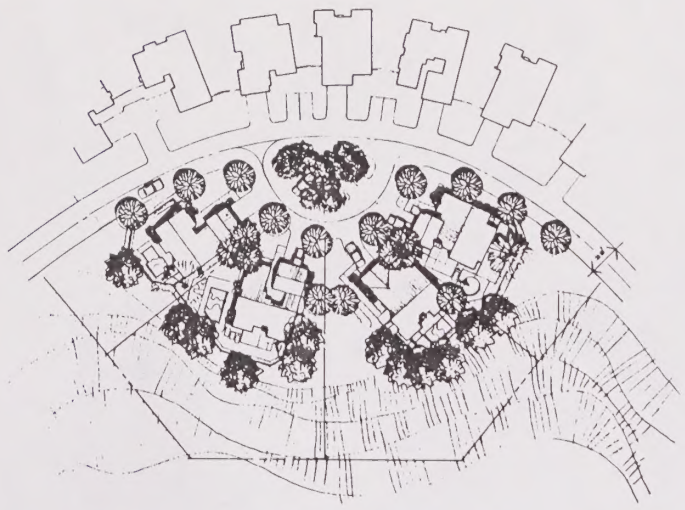
TYPICAL RESIDENTIAL PRODUCTS 7



EH ESTATE HOME CLUSTER 15,000 S.F.
2.25 d.u.s/ac.

EH ESTATE HOME (FEE LOT) 18,000 S.F.
125X150' TYP. 2.25 d.u.s/ac.

VL VIEW LOT (FEE) 20,000 S.F.
100 X 200' TYP. 2 d.u.s/ac.



VL VIEW LOT CLUSTER 20,000 S.F.
2 d.u.s/ac.

SEPTEMBER 25, 1987

Owner
El Dorado Hills Investors, Ltd.
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco California

FIGURE 2-5.
TYPICAL RESIDENTIAL PRODUCTS

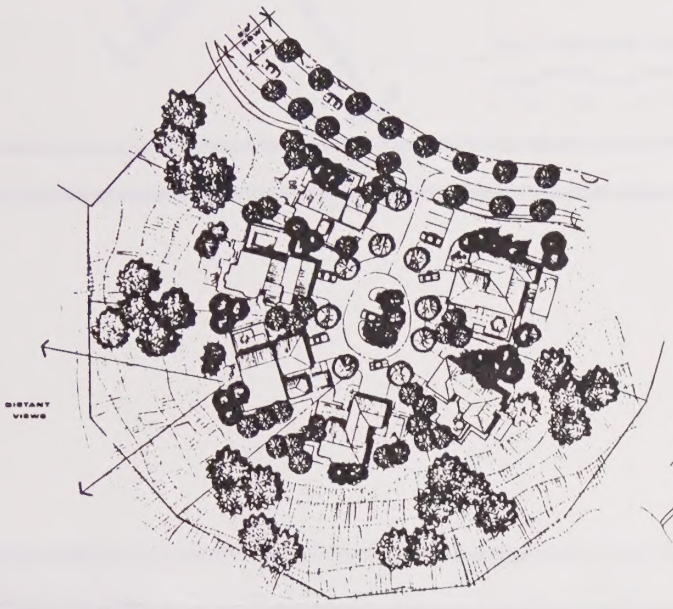
EL DORADO HILLS

EL DORADO COUNTY, CA

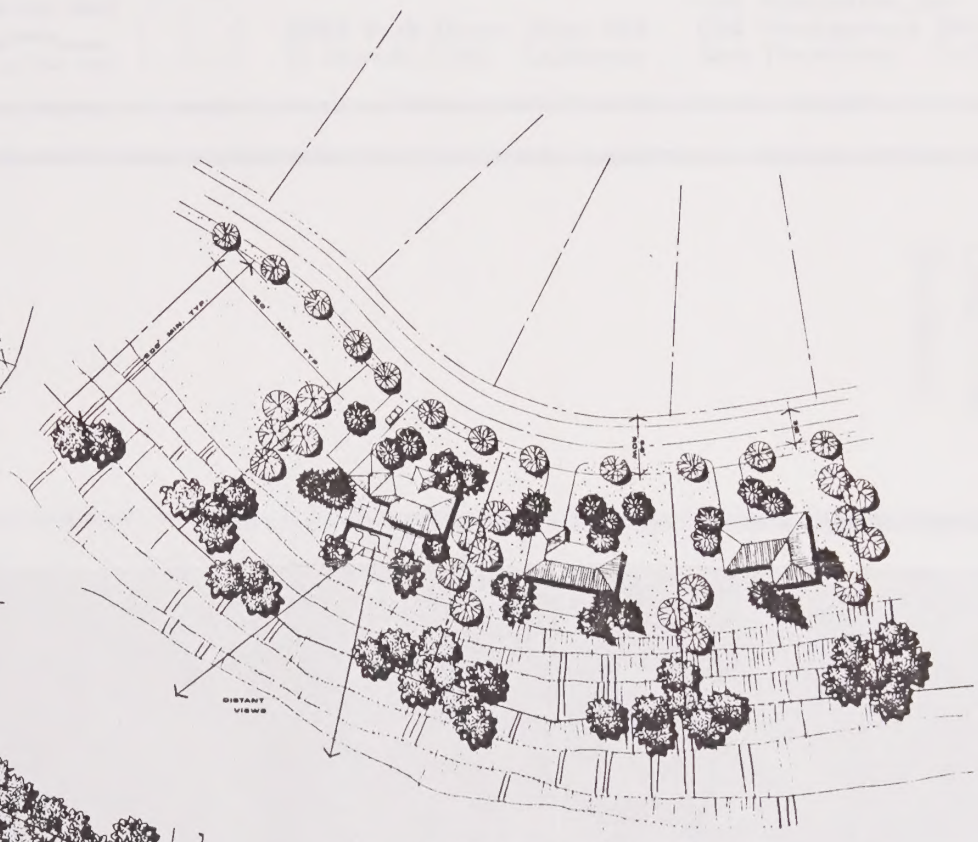
TYPICAL RESIDENTIAL PRODUCTS

8

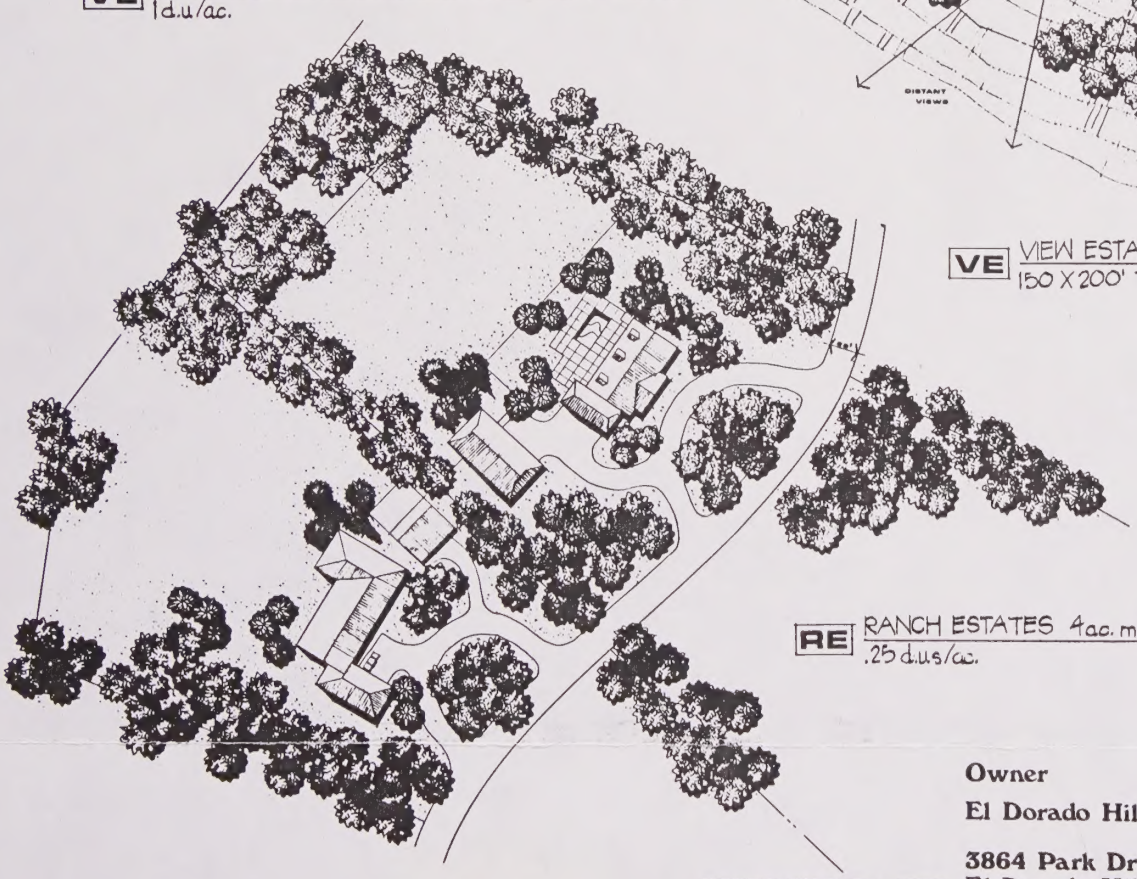
FE FAIRWAY ESTATE 9,000 S.F.
75 X 125' TYP. 3 d.u.s/ac.



VE VIEW ESTATE CLUSTER 30,000 S.F.
1 d.u/ac.



VE VIEW ESTATE (FEE LOT) 30,000 S.F.
150 X 200' TYP. 1 d.u./ac.



RE RANCH ESTATES 4 ac. min.
.25 d.u.s/ac.

SEPTEMBER 25, 1987

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El Dorado Hills Investors, Ltd.
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco California

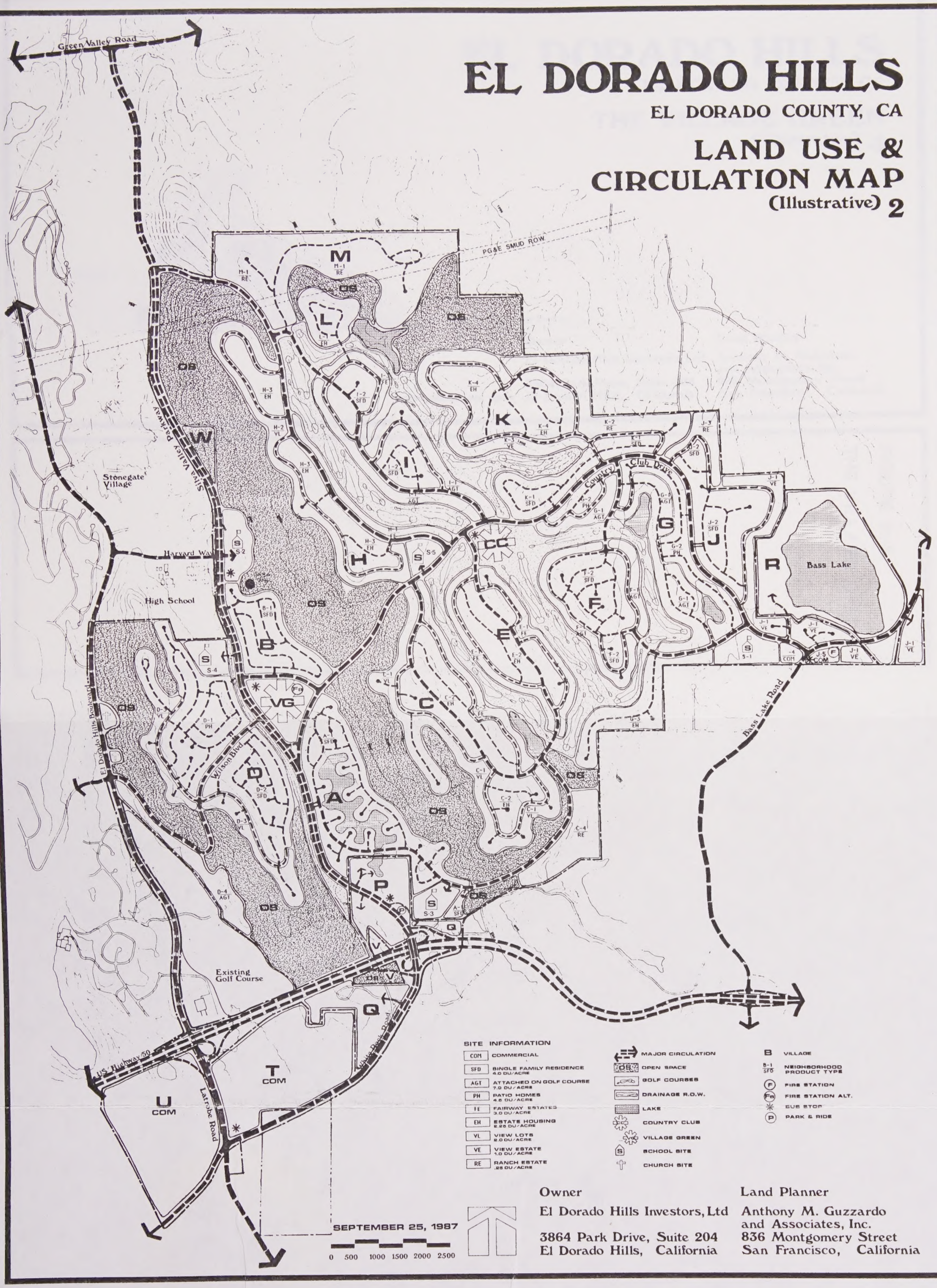
FIGURE 2-6.
TYPICAL RESIDENTIAL PRODUCTS

EL DORADO HILLS

EL DORADO COUNTY, CA

LAND USE & CIRCULATION MAP

(Illustrative) 2



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El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

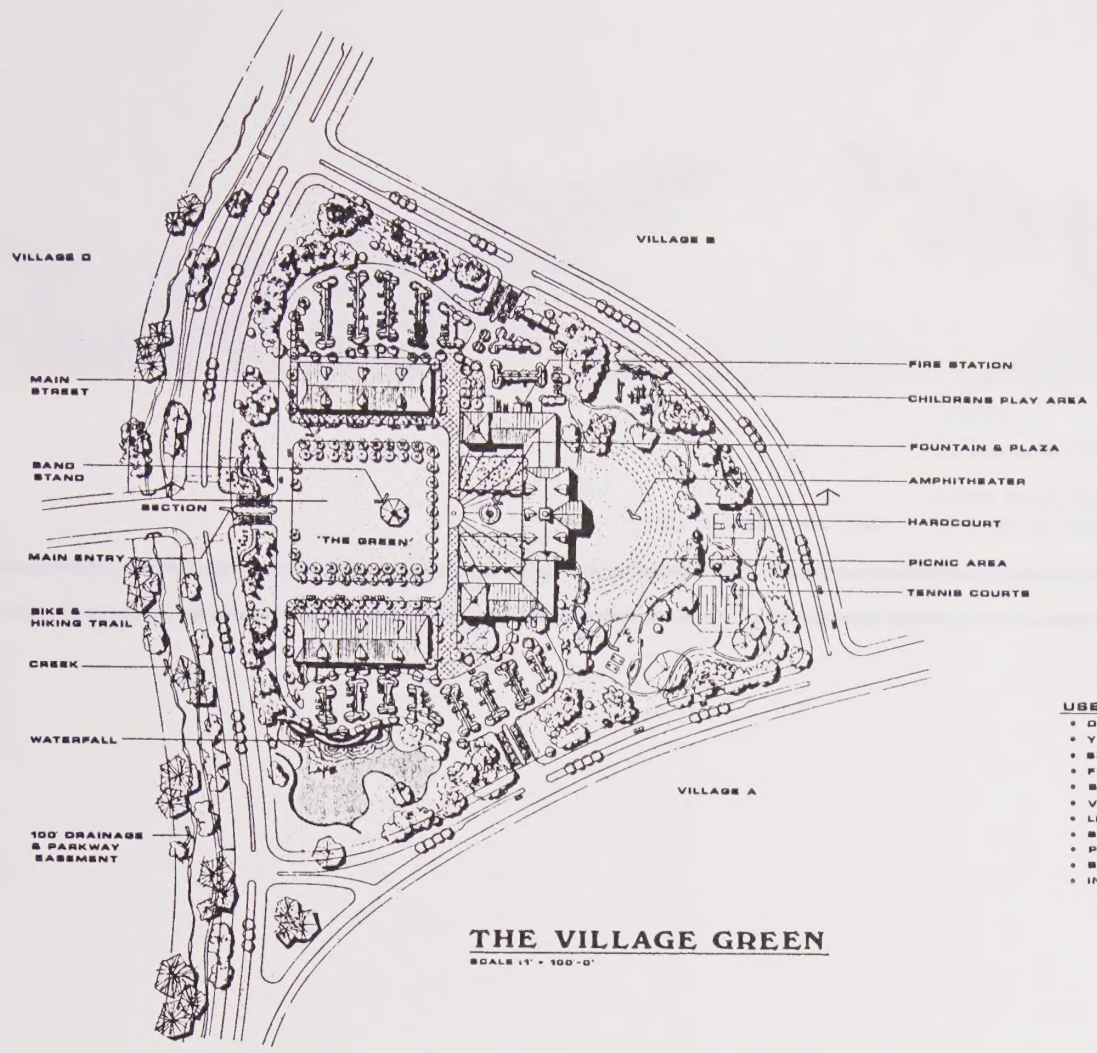
FIGURE 2-7.
LAND USE DIAGRAM

EL DORADO HILLS

EL DORADO COUNTY, CA

THE VILLAGE GREEN

(Illustrative) 4



USES ON 'THE GREEN'

- DAY CARE CENTER
- YOUTH CENTER
- SENIOR CENTER
- FIRE STATION
- SHERIFF SUB-STATION
- VILLAGE HALL
- LIBRARY
- BANK
- POST OFFICE
- BAKERY / CAFE
- INFORMATION CENTER

THE VILLAGE GREEN

SCALE (1" = 100'-0")

TYPICAL SECTION THROUGH THE VILLAGE GREEN

NOT TO SCALE

ELEVATION OF VILLAGE CENTER

NOT TO SCALE

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

SEPTEMBER 25, 1987

FIGURE 2-8.
THE VILLAGE GREEN

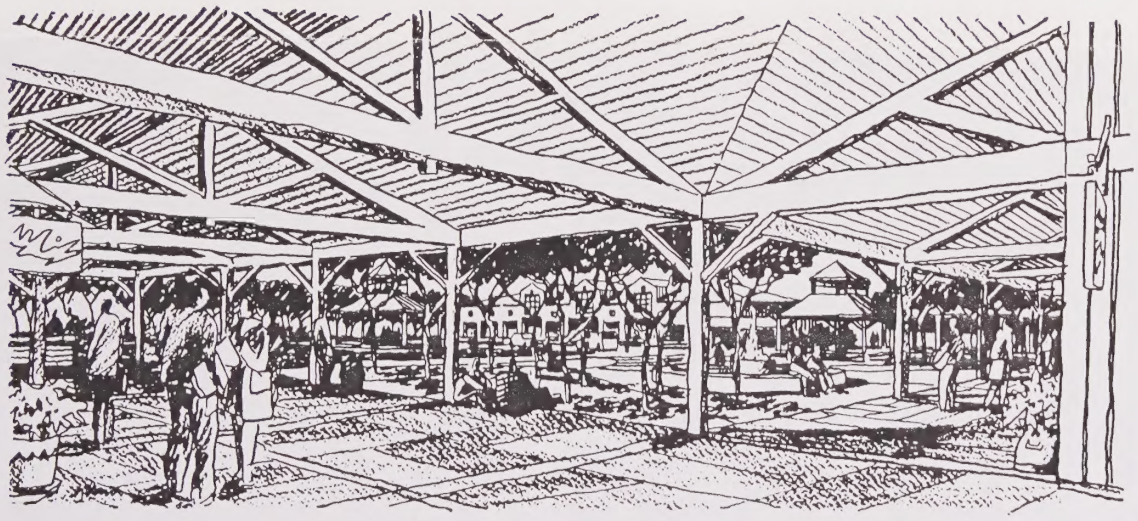
EL DORADO HILLS

EL DORADO COUNTY, CA

VIEWS OF THE VILLAGE GREEN

(Illustrative) 5

VIEW OF THE GREEN



VIEW OF THE PLAZA

SEPTEMBER 25, 1987

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El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 2-9.
VIEWS OF THE VILLAGE GREEN

EL DORADO HILLS

OPEN SPACE MAP

FIGURE 2-10. OPEN SPACE MAP

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

include open drainage swales and retention ponds, integrated into the landscape design of the golf course.

A pro shop, club house, restaurant, lodge, and related ancillary uses would be permitted uses within the golf course areas.

Residential Open Space. A final element of open space would be provided within the residential villages through the dedication of open space easements. These easements would be required in residential cluster areas, where building envelopes and formal outdoor living areas are not designated. In many instances these areas would provide a transition or buffer between ornamental landscaping and publicly held natural open space.

These easements would be held solely by a master or village homeowner's association. The easement would not require public access but would strictly control erection of structures, grading, and tree removal in order to preserve elements of the natural environment.

Circulation System

Streets. The street system includes a variety of street types intended for varying volumes of vehicular traffic and pedestrian use.

Access into the Plan Area is possible from El Dorado Hills Boulevard, White Rock Road, or Bass Lake Road. Silva Valley Parkway, a divided four-lane parkway with landscaped median, will be constructed to serve as the primary entrance into the Plan Area.

Silva Valley Parkway will bisect the Plan Area and connect the villages south of U. S. Highway 50 with Green Valley Road. (A new interchange is being proposed at U. S. Highway 50 and is subject to additional environmental review.) Three major arterial collectors will connect with Silva Valley Parkway to lead to Plan Area villages.

The Specific Plan proposes a Park and Ride lot near U. S. Highway 50 and Silva Valley Parkway and includes provisions for bus shelters and bus turnouts.

Streets will be curvilinear both horizontally and vertically in accordance with natural topography. Villages would generally have limited points of ingress/egress and would not be connected by local streets, in order to minimize through traffic. Residences within the villages would be oriented away from arterial streets.

Typical roadway sections are presented in Figure 2-11.

Pedestrian Paths and Trails. An important component of the circulation system is a network of trails and paths intended to facilitate nonvehicular travel to points both within and beyond the Plan Area. A paved pedestrian path or sidewalk would be provided within the rights-of-way of most streets. In addition, trail easements would be provided in natural open space areas and between some residential lots. The details of the pedestrian path and trail design are contained in the Specific Plan.

Public Services and Utilities

The Specific Plan addresses the provision of water, wastewater, drainage, parks, schools, fire protection, law enforcement, and libraries. The proposed facilities are described in detail in the Specific Plan and summarized below.

Water. The Plan Area would be served by the El Dorado Irrigation District (EID). EID obtains water for the area, primarily from Folsom Lake and, to a less degree, from Jenkinson Lake. Details of the proposed water system are described in Chapter 6 "Public Services" and shown in Figure 6-1.

Wastewater. Wastewater collection, treatment, and disposal would be provided by EID. Existing and proposed sewer lines in the Plan Area are described in Chapter 6 "Public Services" and shown in Figure 6-2. Wastewater would be treated at the El Dorado Hills Wastewater Treatment Plant located south of U. S. Highway 50 east of Latrobe Road.

Drainage. All storm drainage would be conveyed at the surface in unaltered natural watercourses, wherever possible, or in altered natural watercourses, or new manmade channels. All waterways are intended to be natural in appearance. Channels would be curvilinear and shallow with gently sloping sides. Natural stone would be used where revetment is necessary. Culverts would be used at all street crossings.

Retention ponds have been proposed at certain locations along drainage courses to control storm runoff during peak periods (Figure 2-3). The ponds are located within the golf courses and the natural open space areas. In addition to serving flood control needs, these ponds would provide a water source and some habitat for local wildlife. Pond levels would fluctuate with seasonal conditions and irrigation activities.

Park Land. Approximately 26 acres of park land would be designated adjacent to school sites, or as pocket parks in the villages.

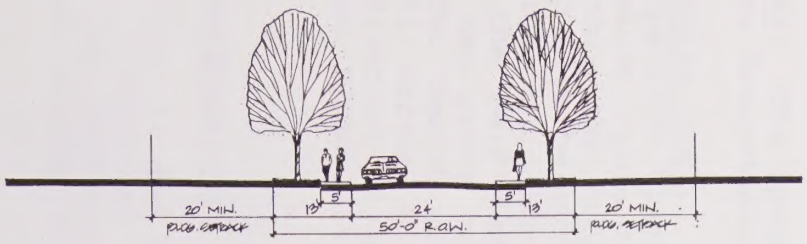
Schools. A total of five school sites would be provided within the Plan Area as shown in Figure 2-3. Site S-1 is an 18-acre site south of Bass Lake. Site S-2 is situated at the

EL DORADO HILLS

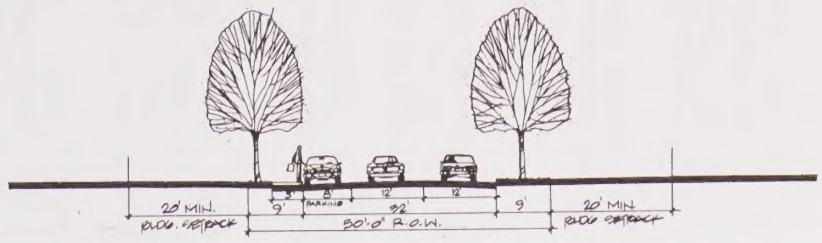
EL DORADO COUNTY, CA

TYPICAL ROADWAY SECTIONS

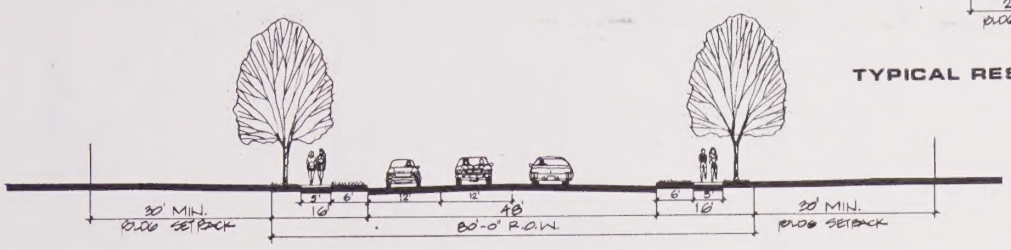
9



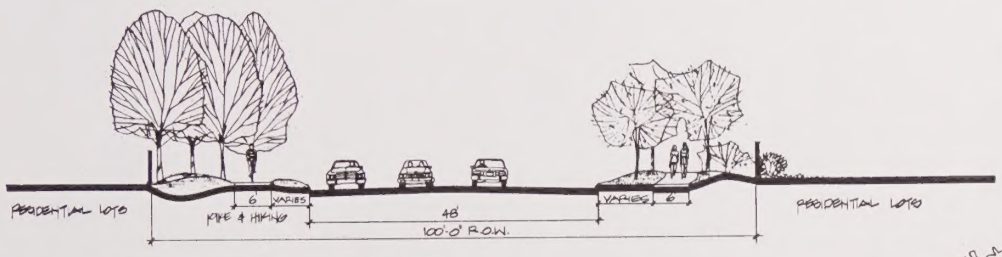
TYPICAL RESIDENTIAL STREET



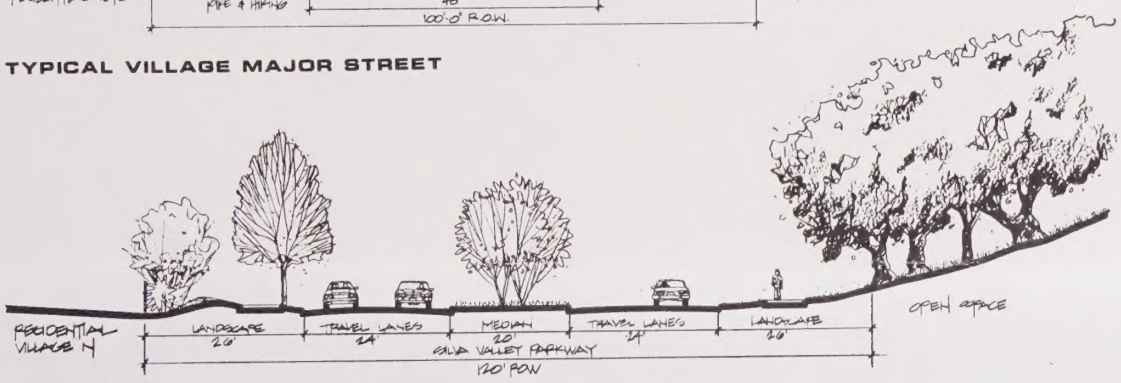
TYPICAL RESIDENTIAL STREET



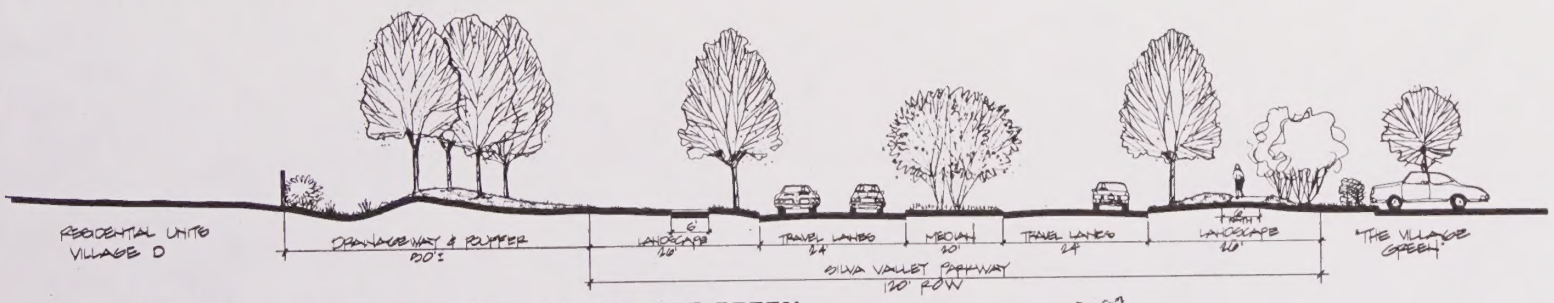
TYPICAL VILLAGE MINOR STREET



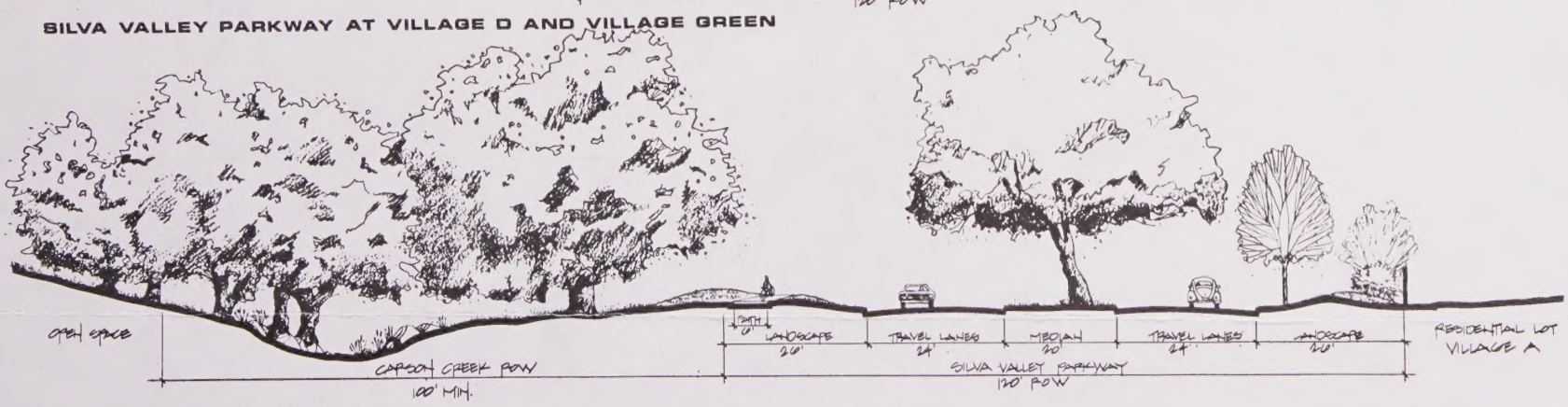
TYPICAL VILLAGE MAJOR STREET



SILVA VALLEY PARKWAY AT VILLAGE N



SILVA VALLEY PARKWAY AT VILLAGE D AND VILLAGE GREEN



SILVA VALLEY PARKWAY AT CARSON CREEK AND VILLAGE A

Owner	Land Planner
El Dorado Hills Investors, Ltd.	Anthony M. Guzzardo and Associates, Inc.
3864 Park Drive, Suite 204	836 Montgomery Street
JULY 1, 1987 El Dorado Hills, California	San Francisco California

FIGURE 2-11.
TYPICAL ROADWAY SECTIONS

intersection of Silva Valley Parkway and Harvard Way. Both of these sites are intended as junior high school sites grades 6-8. Three additional sites, each approximately 8-10 acres in size, are planned to accommodate grades K-5.

Elementary school sites may be adjusted, but would generally be placed in accordance with the following criteria:

- o useable terrain;
- o contiguous or in close proximity to natural open space;
- o contiguous to parks; and
- o within residential villages and located to conveniently provide access for the entire service area of the school.

Fire Protection. The Specific Plan reserves a 0.5-acre fire station site in the vicinity of Bass Lake. Space would also be reserved in the Village Green/Community Center for future development of a second fire station.

Law Enforcement. The Plan Area would rely on the El Dorado County Sheriff's Department for law enforcement. Space would be reserved for a substation at the Village Green/Community Center.

Libraries. The Specific Plan reserves space for a library at the Village Green/Community Center.

Quasi-Public Uses. Certain quasi-public uses are provided within the Specific Plan to meet the needs of the residents. Day care, senior care, and similar uses are likely to locate primarily within the Village Green/Community Center, but other locations may also be suitable. Commercial recreation, such as a racquet club and lodge are intended to be located in the vicinity of the golf course country club; however, other locations also may prove to be desirable over the buildout of the Plan Area. Two church sites are located in the scenic hillside areas near El Dorado Hills Boulevard and Wilson Way. These sites are indicative of the appropriate character of such uses, and additional sites also may be located within the Specific Plan.

Development Neighborhoods

Construction in the Plan Area could begin by spring 1988 at the earliest. Buildout could be complete in the range of 10 years at the earliest and 20 years at the most. Market conditions and infrastructure implementation would be the major determinants.

Development Neighborhoods

Construction in the Plan Area could begin by spring 1988 at the earliest. Buildout could be complete in the range of 10 years at the earliest and 20 years at the most. Market conditions and infrastructure implementation would be the major determinants.

The Specific Plan identifies the following phasing of village construction for the development neighborhoods owned by EDHI (See Figure 2-12).

- North Uplands Golf Course Neighborhood - Villages A, B, D, and V.
- South Uplands Golf Course Neighborhood - Villages H, I, J, K, L, and M.
- Valley Floor Neighborhood - Villages C, E, F, and G.
- Commercial Neighborhood - Villages T and U.

Plan Policies

The Specific Plan includes policies to guide development in the Plan Area (See Table 2-2).

The following logo has been developed by EDHI for their Specific Plan and, ultimately, for use throughout the El Dorado Hills area. It is presented here for the reader's information.

EL DORADO
HILLS

EL DORADO HILLS

EL DORADO COUNTY, CA

CONCEPTUAL NEIGHBORHOOD PLAN

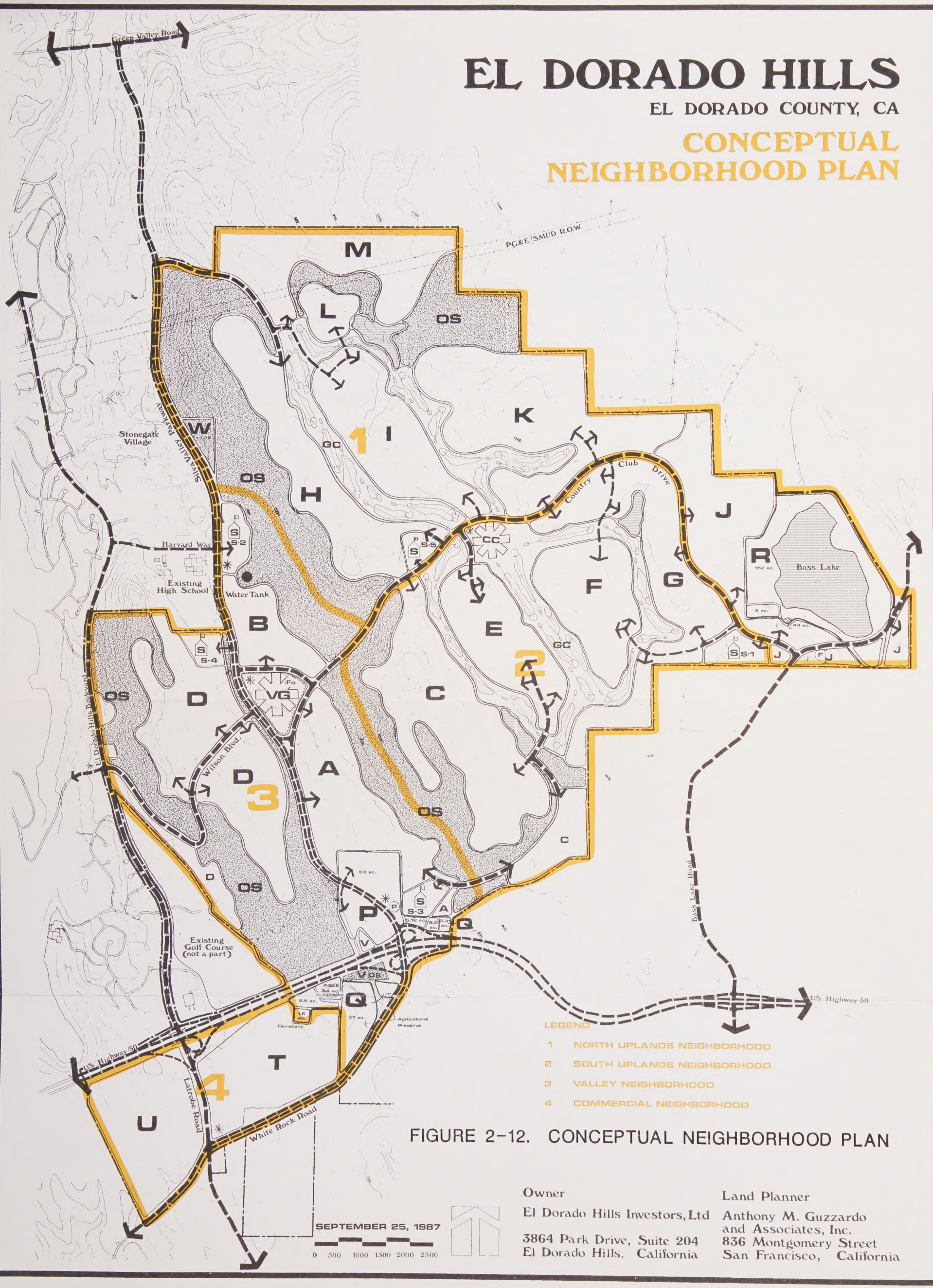


FIGURE 2-12. CONCEPTUAL NEIGHBORHOOD PLAN

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

Table 2-2.

POLICIES OF THE EL DORADO HILLS SPECIFIC PLAN

The policies of the Specific Plan are intended to provide direction and guidance to decision makers, in the implementation of the plan. The policies are consistent with, provide refinement of, and incorporate the goals and policies of the El Dorado Hills/Salmon Falls Area Plan.

Development within the El Dorado Hills Specific Plan area is intended to conform to an overall character and standard of quality. The standards to be applied are expressed in the El Dorado County Zoning Ordinance, as implemented in the Planned Development Overlay Zone, and in various elements of the Specific Plan. These standards include the Specific Plan policies as expressed below, and in the Design Guidelines appended to this Plan (Appendix C).

General Policies

a. The Specific Plan area shall be an integral and complementary component of the El Dorado Hills community and shall provide the full range of facilities and services necessary for a self-contained community. (NEW)

b. Large areas within the plan boundaries which contain steep topography, expanses of tree cover, sensitive environmental or archeological features, or major recreational amenities shall be preserved as permanent open space. (NEW)

c. The major commercial activities within the plan area shall be concentrated in locations to serve the community and shall be protected from non-complementary, competing land uses. (NEW)

d. Zoning within the plan area, with the exception of designated rural uses, shall be developed under planned development ordinances of the County of El Dorado. (NEW)

e. Design review procedures for development proposals within planned developments shall be provided in the Design Guidelines. Design review shall consider subdivision design, architectural review, site plan review, review of building materials, common facilities, landscaping, lighting, grading and improvement plans for compliance with restrictions and requirements set forth in the Design Guidelines and Covenants, Conditions and Restrictions (CC&Rs). (NEW)

The Design Guidelines shall allocate, to the landowner/developer and the County, the responsibilities of design review.

Residential Policies

Architecture

It is the intent of the policies set forth in this section to guide the general architectural style and appearance employed in the construction of all residences in the plan area. The objective is to provide for building design and placement in a manner which is harmonious with the overall character of the plan area and the particular village.

a. Buildings shall generally be limited to two stories in height except where topography reasonably allows higher structures without significant visual impact.

b. Buildings shall generally be designed and sited in accordance with the constraints of topography, vegetation, compatibility with adjacent uses, and other natural features of the village area and a particular building site.

Site Development and Grading

It is the intent of the policies set forth in the Specific Plan to maintain, to the maximum extent possible, the natural land forms and to control vegetation removal, landscaping, and grading. Grading controls are intended to reduce soil erosion to the maximum extent possible and assure compatibility with adjacent terrain.

a. Grading for roadway, driveway building pads and on-site improvements shall be minimized.

b. Grading volumes of cut and fill material shall be minimized and balanced on-site wherever possible. Larger grading volumes may be acceptable where improved visual and environmental effects will result.

c. Residential structures or accessory structures on slopes in excess of 20 percent shall be designed through use of erosion controls, engineered grading and use of post and beam or step-footing construction to ensure long-term slope stability. Benched hillsides for building sites shall be avoided and split level structures encouraged.

d. Removal of oak trees and other large native trees with trunk circumference of 30 inches at 4.5 feet above grade shall be avoided where feasible. A tree replacement policy is provided in the Design Guidelines.

e. In order to avoid damage to root systems, residential construction shall be controlled within the canopy area of oak trees over 30 inches in circumference, and shall be subject to review as provided in the Design Guidelines.

f. Landscaping in improved common areas shall be of drought resistant varieties.

g. In order to preserve the vegetative character of the plan area, the planting of native trees, shrubs and ground cover shall be encouraged in all new landscaping.

h. Landscaping in areas adjacent to natural open space shall be fire resistant.

i. Site design, building orientation, street and lot patterns shall follow solar orientation principles to the maximum extent practicable in order to maximize energy conservation.

Commercial Policies

The objective of these commercial policies is to provide for site design and architectural style which are harmonious with the natural character of the plan area and adjacent villages.

a. The designated regional commercial center (Village T) shall be designed to serve the regional commercial needs of the area. Interim commercial uses may be permitted for the purpose of fostering and complimenting the regional commercial center. (NEW)

b. Each commercial area shall be accessible from at least one major collector or arterial road with sufficient design capacity to accommodate traffic generated by the businesses, as well as other local traffic.

c. Commercial areas shall be directly accessible by public transportation, pedestrian and bicycle routes.

d. Buffers between commercial areas and adjacent land uses shall be provided by use of walls and solid fencing where appropriate and shall also incorporate the use of landscaping, setbacks, and location of street and utility easements.

e. Common access drives shall be used where feasible.

f. Individual buildings shall be sited to facilitate wind protection and shade to enhance the quality of outdoor space.

g. Trees shall be planted and maintained throughout parking lots in excess of ten parking spaces to ensure that within 15 years after planting at least 40 percent of the parking area is shaded.

h. Natural drainage courses shall be preserved and protected from development.

Commercial Policies Related to Village J, The Village Green/Community Center, and Golf Course/Country Club

In addition to the policies described above, the following are applicable specifically to the Village J commercial areas, and commercial components of the Village Green/Community Center and Golf Course/Country Club.

a. Use of natural materials such as wood and native stone is encouraged.

b. Landscape design shall incorporate native trees and shrubs.

c. Size, color and material of identification signs shall be consistent with the architectural style of the village and commercial area.

Village Green/Community Center Policies

a. The Village Green/Community Center shall foster mixed use facilities which will provide recreational, public, and limited retail services in a central and convenient location within the community.

b. The Center shall present uniform landscaping, lighting and signage treatment to ensure a desirable, attractive and safe environment. Lighting will be compatible with, and screened from, adjacent residential areas.

c. Opportunities for water features, such as fountains and open water courses will be incorporated as a prominent design theme in the Center.

d. Opportunities shall be provided for outdoor and indoor public activity areas, including space for cultural events, organizational meetings, recreational areas, and public seating areas.

e. Opportunities for leased space in the Village Green for public service providers shall be made available if the need is demonstrated. (NEW)

f. Commercial buildings shall be limited to one and two story structures. (NEW)

Golf Course/Country Club Policies

The objectives of the golf course/country club policies are to provide for adaptation of the golf course to the natural terrain, provide for maximum preservation of open space and to ensure compatibility with contiguous residential and open space areas.

a. Natural topography shall be retained to the maximum extent possible and incorporated into the site design.

b. Storm water drainage shall be by means of natural stream courses incorporated into the site design, whenever possible.

c. Removal of existing trees and riparian vegetation shall be kept to a minimum.

d. Water conservation measures shall be employed in the design and landscaping of the golf courses. In particular, provision shall be made for use of treated wastewater and stored drainage water for irrigation to the maximum extent possible.

e. Golf course boundaries shall be defined without the use of fencing wherever possible. Where fencing is required, an open design shall be employed.

f. All landscaping, site development and architectural design shall be consistent with the Design Guidelines of the Specific Plan.

g. The location, design, boundaries and layout of the golf courses as shown on the Specific Plan shall vary in relation to open space and residential areas as necessary to accommodate topography, existing amenities, and other natural features. (NEW)

Institutional Uses Policies

1. All Institutional Uses

The policies related to institutional land uses are intended for such uses as churches, schools, and public buildings.

a. Institutional uses (schools excepted) shall be located on arterial streets so that associated vehicular traffic does not disrupt residential areas.

b. All institutional uses shall be of a design and scale that is compatible with the overall design of the Specific Plan area and the particular village as indicated in the Design guidelines.

2. Schools

a. Schools shall be located within residential villages convenient to students who reside beyond those villages, and shall be located to facilitate access.

b. Schools shall be linked to the pedestrian trails and bicycle path system.

c. School sites should be located adjacent to public open space and public park sites wherever possible and should provide for joint use of facilities.

d. School sites as shown on the Specific Plan map will be reserved for public acquisition and ownership in conjunction with the filing of tentative subdivision maps for each village. (NEW)

e. School district boundaries should be consistent with village boundaries to prevent a village being divided between school districts. (NEW)

3. Neighborhood Parks

a. Park facilities shall be designed to meet the recreation needs of village residents, consistent with the availability of the recreational and open space areas.

b. Where school sites are contiguous to parks, play apparatus and other recreation facilities and amenities shall be coordinated to avoid duplication.

c. Native and drought tolerant trees and shrubs shall be incorporated into the landscape design of parks where feasible.

d. Play equipment and other features shall be constructed to achieve harmony with the natural setting of the Specific Plan area.

e. Parks shall be designed so as to minimize maintenance requirements.

f. Parks shall be designed to allow surveillance by adjoining residents, security services and the Sheriff's Department.

g. Removal of existing trees shall be avoided wherever possible.

h. Public parks will be reserved for public ownership with the filing of tentative subdivision maps for each village. (NEW)

i. Public parks should be linked to bike and pedestrian paths, if feasible. (NEW)

j. Public parks should not be located on slopes in excess of 20 percent or adjacent to a golf course. (NEW)

Circulation Policies

The circulation policies are intended to establish standards for the improvement of public and private streets, pedestrian paths and trails.

1. Public and Private Streets

a. Bus shelters and turnouts shall be provided along arterial streets near village entrances to facilitate use of public transit.

b. All street furniture (bus shelters, benches, trash receptacles, etc.) within the plan area shall utilize a common design theme as provided in the design guidelines.

c. Trees shall be planted along all streets to provide shade, soften the appearance of a hard streetscape and to create a tree canopy to enhance pedestrian scale (See Tree List contained in Design Guidelines).

d. Arterial streets contiguous to residential villages shall be separated from residential areas by a 6-foot-high fence for purposes of noise attenuation. The design, color and construction materials shall be consistent with the Design Guidelines. Such fences may be supplemented by earth berms and landscaping within the street setback.

e. In all other instances where fencing is utilized along an arterial street, a 4-foot-high split-rail open design, wrought iron, or dry stone wall shall be employed. Chain link fencing is permitted when visually screened from street right-of-way.

f. Private streets shall be constructed to the same standards as public streets. (NEW)

g. Private streets shall include parking bays at a ratio of one guest space per residence when on-street parking is prohibited. (NEW)

2. Pedestrian Sidewalks, Paths and Trails

a. Sidewalks, paths and trails along major arterials should be separated from streets and parking areas to the maximum extent possible both for safety and the enjoyment of the user.

b. Paths and trails through residential open space should be located to minimize intrusion upon privacy of residents.

c. Where possible, paths and trails should follow natural drainage courses. In most instances drainage easements will provide for trail construction and public access.

d. Sidewalks, paths and trails which are not adjacent to public streets should be clearly marked to facilitate use and discourage wandering beyond recorded easements.

f. Barriers and trail signage shall be designed and installed to prevent access by unauthorized motor vehicles.

g. Paths and trails within natural open space should be located to take advantage of scenic areas and vistas.

h. Construction of paths and trails within natural open space shall ensure minimum impact on terrain and vegetation and standards should also strive to minimize maintenance requirements.

j. Sidewalks within street rights-of-way shall meander irrespective of the alignment of the street pavement.

Natural Open Space Policies

The natural open space policies are to guide the preservation, management, and maintenance of these areas in their relation to adjacent land uses.

a. The boundaries of natural open space shall blend with boundaries of the villages in a manner to enhance the integration of open space and developed areas.

b. Open space shall be linked visually and physically to the extent practicable by prohibiting perimeter lot fencing adjacent to the open space. Perimeter fencing may be permitted for rural parcels as provided in the Design Guidelines and CC&Rs.

c. Increased run-off from adjacent development will require erosion control measures to be coordinated with landscape design of adjacent development areas. Emphasis shall be placed on methods which rely on natural drainage systems and minimize change to the existing condition of creek channels within open space areas.

d. An Open Space Management Plan shall be completed and approved as to form by the planning director and shall be an implementation mechanism of this Specific Plan in order to set forth procedures and responsibilities as to the ownership, preservation, and management of public and private natural open space areas. The Open Space Management Plan shall consider the dedication of open space easements to the County of El Dorado, over the public open space areas should dedication of fee ownership of these areas be made to any other entity. (NEW)

1. Drainageway Policies

a. A 100-foot-wide undeveloped buffer zone shall be established along Carson Creek in accordance with Department of Fish and Game requirements. In this buffer, vegetation removal shall be for the purpose of drainage improvements.

b. Drainageway easements shall specifically preclude erection of structures and vegetation removal, except for drainage improvement, other site development not consistent with the purpose of these easements.

c. Drainageways located on privately owned property shall be within recorded easements which provide for routine maintenance and pedestrian access.

2. Fire Hazard Control Policies

a. Open fires and barbeques shall be prohibited year-around in natural open space areas.

b. Dirt roads for fire equipment access shall be sited and created in accordance with specifications of the El Dorado Hills Fire Department and will be maintained by a master property owners association, or the public entity that will acquire the public portions of the open space. These access roads will also serve as fire breaks. To the maximum extent possible, fire access roads shall incorporate existing unimproved roads on the site. (NEW)

c. Public access by unauthorized motor vehicles shall be prohibited by use of barriers at access points.

d. Perennial grasses and other fire resistant plant materials may be introduced in high fire hazard areas on a limited basis to provide fire breaks.

e. The stability of plant communities in grassland in close proximity to residential areas shall be monitored by the fire protection agency to determine if brush and other heavy fuel-load plants are encroaching.

f. The El Dorado Hills Fire Department shall have the right to declare natural open space areas closed to the public during periods of high fire hazard and will have authority to post appropriate warning devices and signage.

g. Livestock grazing may continue on an interim basis for fire control purposes.

Summary of Findings

Chapter 3
Summary of Findings

This section presents a summary of project impacts and mitigation measures and a number of impact conclusions required by CEQA (CEQA Guidelines, Section 15143).

Summary of Impacts and Mitigation Measures

Table 3-1, presented at the end of this chapter, presents a summary of significant, potentially significant, and less-than-significant environmental impacts of the proposed Specific Plan. The mitigation measures necessary to reduce impacts to a less-than-significant level are summarized in the table and numbered in order of their occurrence in the text. The table is based on the assumption that the project would be required to incorporate those goals, policies, and mitigation measures identified in the El Dorado Hills-Salmon Falls Area Plan that are pertinent to each subject area.

Cumulative impacts resulting from full buildout of the project, as well as other projects in the area, are included in Chapter 17, "Cumulative Impacts".

These summary tables are intended to provide a general overview of the environmental impacts of the project. For a thorough discussion of existing conditions in the Plan Area, and impacts of the project and mitigation measures to reduce impacts, please refer to the appropriate chapters of the text.

Significant Unavoidable Impacts

The impacts of implementing the Specific Plan which are considered unavoidable and adverse are those impacts for which no mitigation is available other than implementation of the No-Project Alternative. These significant unavoidable impacts include:

- conversion of the Plan Area from a vacant grazing area to an urbanized area;
- an 18-23 percent increase over El Dorado County's 1986 population, adding from 19,247-24,536 people;
- utilization of 87 percent of the total existing per year water entitlement, necessitating the development of

additional water sources with resultant environmental and fiscal effects;

- contribution to sewage volumes which would exceed ultimately planned sewage treatment plant capacity;
- existing plus project traffic conditions which would affect Latrobe Road between U. S. Highway 50 and White Rock Road;
- contribution to regional air quality problems;
- contribution to making it more difficult to attain air quality standards in the Regional Air Quality Plan;
- single-event noise levels produced by aircraft from Mather Air Force Base;
- direct loss of Live Oak forest wildlife habitat due to project construction; and
- growth inducement impacts.

Growth Inducement

The following CEQA provision relates to discussing the growth-inducing aspects of the proposed project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may further tax existing community service facilities, so consideration must be given to this impact. Also discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Foster Economic, Population, or Housing Construction

The creation of a large residential and commercial community in a rural area would lead to both direct and indirect economic and population growth. The 7,346 residences and the population of 19,247 that would occupy the Plan Area would themselves be a substantial component to growth in the area,

representing an 18-23 percent increase over 1986 population levels. The creation of such a population center would most likely serve to encourage adjacent property owners to develop their acreages to take advantage of the rise in property values.

Remove Obstacles to Population Growth

To develop the Plan Area to full buildout, it would be necessary for the El Dorado Irrigation District to develop new water sources and to expand and/or develop a new wastewater treatment plant. Both of these activities could serve to provide or develop excess capacities that could be made available to other projects in the service area. To the extent that service district activities providing adequate services to the Plan Area results in the creation of "surplus" capacities, the project may remove obstacles to growth in the surrounding area.

Tax Existing Public Service Facilities

As indicated in Chapter 6 "Public Services and Utilities," service capacities and intrastructure for water, sewer, fire, and schools would all be substantially impacted by project development. Particularly in the case of water and wastewater, the project would not at this time generate sufficient taxes or impact fees to fully offset the cost of providing necessary service facilities.

Secondary Effects

The development of additional water supplies and the increase in vehicle emissions are impacts of the project which could generate potentially significant secondary effects in their own right. It is not possible to quantify these impacts at this time; however, the development of new water sources throughout the western Sierra foothills is controversial, capital-intensive, and capable of generating environmental impacts. The generation of increased vehicular emissions could create problems both from health and environmental perspectives as well as from the perspective of governmental regulation.

Effects Found Not to Be Significant

The following impacts are those effects of project implementation or design which would generate less-than-significant impacts either with identified mitigation or due to their intrinsic nature. Those impacts which are less-than-significant due to implementation of measures already included in project design are marked with an (*).

- Project density is less than allowed in Area Plan (*).

- Spatial relationships of various project components would not create any impacts on adjacent components (*).
- General Plan requires that densities between residential developments shall blend with existing development (*).
- The project represents a 13.8 percent increase in countywide housing.
- Project would generate jobs during construction and operation (beneficial impact).
- Generation of increased solid waste.
- Project occupation would result in increased natural gas and energy consumption.
- Increased generation of stormwater runoff (*).
- Erosion and sedimentation patterns would alter as a result of project (*).
- Loss of annual grassland habitat.
- Loss of seeps and stock ponds.
- Bass Lake shoreline and aquatic habitat would not be altered by proposed development (*).

Short-Term Uses of the Environment Versus Long-Term Productivity

The proposed project would result in irretrievable commitments of energy and other nonrenewable resources used in building materials to construct the project, and the loss of open space and grazing land to urbanized uses (no prime agricultural soils exist in the Plan Area).

Irreversible Environmental Changes

Approval and construction of the project would irreversibly commit vacant land to urban uses through the installation of roads and utilities and the construction of buildings. Vehicle trips associated with the project would cumulatively add to the use of fuel products which are considered limited natural resources. The project would also result in the use of aggregates, metals, and petrochemicals in the form of asphalt oils, plastics, paints, and other goods used in construction.

Cumulative Impacts

Chapter 17, "Cumulative Impacts" includes a complete discussion of the effects of currently planned plus project growth on the western El Dorado County area. A total of 59 projects are proposed. If approved, these projects would create 17,369 residences with a population of 45,507 to 58,012. The most significant effects of this growth would be: 1) a surpassing of the 1990 growth goal for housing units by 3,597 units; 2) a surpassing of the year 2000 population goal by 5,605 people prior to 1990; and 3) significant shortfalls in the ability of various public service districts to provide adequate levels of service to the project area.

Alternatives to the Proposed Project

Four alternatives to the proposed Specific Plan are considered in Chapter 16 of this report. These are defined as follows.

No-Project Alternative

This alternative is required by CEQA and is generally construed either as absolutely no development or as a continuation of the status quo. For the purpose of this EIR, the No-Project Alternative is defined as no development. Grazing would probably continue on the Plan Area.

Higher Density Alternative

Development under this alternative would occur consistent with the El Dorado Hills-Salmon Falls Area Plan land use densities which would allow up to 3.0 dwelling units per acre. Approximately 11,400 new residential units could be developed under this alternative.

Design Alternative/Mitigated Project

Development of this alternative would require the county to adopt all of the recommended mitigation measures and monitor their implementation.

Altered Mix of Land Uses

Development of this alternative would consist of retaining the same overall density but achieving an increase in open space by increasing the use of clustered units rather than single family dwellings.

Table 3-1. Summary of Environmental Impacts and Mitigation Measures

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
LAND USE	Conversion of 4,086 acres of agricultural land to urban uses.	SU	None available if plan implemented.	SU
	Inconsistency between proposed zoning and parcel sizes for Village M and Village C Neighborhood 4.	PS	None required.	LS
	Spatial relationship of Village T (commercial) and Village Q (residential) could result in land use conflicts.	PS	Implement applicable Specific Plan policies concerning buffers between incompatible uses.	LS
	Reduction in the amount of open space in El Dorado Hills.	LS	None required.	LS
	Specific Plan consistent with El Dorado County General Plan and El Dorado Hills-Salmon Falls Area Plan.	LS	None required.	LS
	Eleven percent reduction in areawide acreage devoted to grazing.	LS	None required.	LS
	Designates Clarksville Cemetery as residential.	LS	Use permitted by zone districts. No mitigation required.	LS
	Spatial relationship of land uses would result in less-than-significant impacts.	LS	None required.	LS

[1] S = Significant
SU = Significant and unavoidable (requires findings)
PS = Potentially significant
LS = Less than significant

[2] Specific Plan would need to comply with goals, policies, and mitigation measures contained in the El Dorado Hills-Salmon Falls Area Plan. The "level of significance after mitigation" assumes that all identified Plan Policies and Design Guidelines contained in the Specific Plan and Appendices are fully implemented at the appropriate design or construction stage of project development. Any deviation could result in less than full mitigation of a significant or potentially significant impact.

[3] Each mitigation measure has been consecutively numbered for ease of reference during public review. These numbers do not appear in the text.

[4] Assumes implementation of all recommended mitigations (including Policies and Design Guidelines of Specific Plan) unless otherwise noted.

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
LAND USE (Continued)	Location of residential uses (Village Q) adjacent to Williamson Act land is potentially incompatible and could require special setbacks.	LS	Majority of uses next to Williamson Act lands are open space or not tangent at two corners; no mitigation required.	LS
	Zoning ordinances require special setbacks to protect agriculture if parcel is adjacent to timberland, horticultural, or high density livestock.	LS	Parcel not adjacent to these uses; no mitigation required.	LS
	EDH-SF Area Plan requires that densities between residential developments shall blend existing development/zoning to the proposed density.	LS	None required.	LS
	Project design must incorporate EDH-SF Area Plan goals, policies, and mitigation measures.	LS	None required (see Appendix I).	
POPULATION, HOUSING, AND EMPLOYMENT	The project is inconsistent with the County Housing Element Policy Objectives 3 and 10.	S	County must ensure that adequate housing is constructed elsewhere in the county for rental and low income categories.	LS
	The project represents a 13.8 percent increase over existing countywide housing, adding 5,688 single-family units and 1,658 multifamily units.	LS	None required.	LS
	The project would generate a projected total of 3,130 direct, permanent jobs; 1,565 indirect jobs; and over 8,000 person-years of employment.	LS	None required.	
	The project would generate 3,130 onsite direct jobs with a demand for 2,089 to 2,664 housing units. Development of the Plan Area would slightly improve the projected jobs-to-housing balance in the Highway 50 corridor.	LS	None required.	LS
	Provision of additional housing.	LS	None required.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
PUBLIC SERVICES AND UTILITIES				
Water	Implementation of the Specific Plan would generate an estimated water demand of 7.1 MGD; this amounts to over 90 percent of the current yearly entitlement.	S	Install water-conserving plumbing fixtures. EID should develop additional water sources. Require a water conservation landscape program. Require that all new connections are metered. Consider requiring other water conservation programs. EID should implement planned improvements at water treatment plant.	LS
Wastewater	Wastewater generation would exceed the existing wastewater treatment plant capacity as well as the capacity planned for completion in 1 year. Capacity that is ultimately planned for treatment plant could be insufficient to handle combined flows and expected Plan Area flows.	S	EID should expand treatment capacities as demand warrants.	LS
Solid Waste	Solid waste generated by the project would use 32-40 percent of the landfill's total ton-per-year intake.	S	Continued normal expansion of landfill would minimize impacts.	LS
Law Enforcement	Project would require increased expenditures for additional law enforcement personnel and patrol vehicles.	S	Provide adequate funding mechanisms for Department personnel and capital improvements.	LS
Fire Protection	Implementation of the Specific Plan would increase the demand for fire protection services. Development of the Plan Area would increase the potential for wildfires.	S	Implement the Department's 10-Year Plan. Landscaping adjacent to open space shall be fire-resistant. See also specific measures regarding fire hazard control.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
PUBLIC SERVICES AND UTILITIES (Continued)	Buildout of the Plan Area would provide residential and commercial development fees.	LS	The current fee schedule appears adequate to cover capital improvement costs; no additional mitigation required.	LS
Schools	Development of the Plan Area would generate a substantial increase in students at a time when existing schools are at capacity and the project-funded capital improvements are not yet constructed.	S	Select alternative school funding mechanisms and identify timing.	LS
Parks and Recreation	Increased demand for recreational facilities and possible conflict with CSD standards.	S	Coordinate park land acreage and facilities with the Community Service District.	LS
Electrical and Gas Service	Buildout of the Plan Area would create a substantial demand for natural gas and electrical energy.	LS	PGandE indicates that no mitigation is required.	LS
TRANSPORTATION	Implementation of the Specific Plan with existing traffic conditions would result in significant impacts on the following major roadways and intersections:			
	El Dorado County Impacts:	S		LS
	- Green Valley Road: LOS F.		Widen between Francisco Drive and Silva Valley Parkway.	
	- El Dorado Hills Blvd.: LOS F.		Widen from Harvard Way to U. S. Highway 50.	
	- Green Valley Road and Francisco Drive: LOS F.		Improve intersection.	
	- El Dorado Hills Blvd. and Harvard Way: LOS F.		Widen El Dorado Hills Blvd.	
	- El Dorado Hills Blvd. and U. S. Highway 50 westbound ramps: LOS F.		Add a new westbound to southbound ramp.	
	- El Dorado Hills Blvd. and U. S. Highway 50 eastbound ramps: LOS E.		Widen El Dorado Hills Blvd.	
	- Impacts at all intersections.		Signalize intersections.	

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
TRANSPORTATION (Continued)	Areawide Impacts:	S	Construct Silva Valley Parkway interchange. Improve El Dorado Hills Blvd. interchange.	LS
	- U. S. Highway 50 LOS F.		Widen to six lanes.	
	- White Rock Road LOS F.		Widen to four lanes.	
	- Green Valley Road LOS F.		Widen to four lanes.	
			Also, update El Dorado Hills traffic impact fee, adopt and implement transportation system management ordinance, and consider joint powers agreement to finance areawide improvements.	
AIR QUALITY	Project would delay or prevent attainment of the Sacramento Air Quality Management Plan ozone standard.	S	County should adopt and implement transportation system management ordinance.	SU
	Temporary increase in construction-generated pollutants.	PS	Implement dust-reducing construction practices.	LS
	The effect of wood smoke on visibility and local particulate concentrations.	LS	None required.	LS
	Carbon monoxides released by project-related auto traffic would increase but remain below state and federal standards.	LS	Implement planned and recommended roadway improvements. Adopt and implement transportation system management ordinance.	LS
NOISE	Change in traffic noise levels due to development of Plan Area is considered significant on portions of Silva Valley Parkway, Country Club Drive, Latrobe Road, White Rock Road, El Dorado Hills Blvd., and Bass Lake Road.	S	Acoustical analyses should be prepared for residential developments located adjacent to U. S. Highway 50 and for county roadways having an average daily vehicle traffic of 13,000 or more.	LS
	Commercial noise impacts on adjacent residential uses.	S	Acoustical analysis should be prepared for designs and layouts of shopping centers adjacent to residential areas.	LS
	Construction noise impacts.	PS	Limit construction to daytime hours, fit equipment with mufflers or enclosures, and have construction traffic comply with state laws.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
NOISE (Continued)	Effects of noise from traffic and onsite activities on outdoor uses.	LS	None required.	LS
GEOLOGY, SEISMICITY, AND SOILS	Erosion and siltation would increase.	S	Incorporate soil conservation measures as required by the El Dorado County Resource Conservation District.	LS
	Four soil series have moderate to high shrink-swell potentials.	PS	Investigate expansive soil sites.	LS
	Effects of existing spring and wet areas on road and building stability.	PS	Construct appropriate subdrain systems.	LS
	Regional and site seismicity impacts.	LS	Project would comply with Uniform Building Code. School construction would require site-specific evaluations of school sites.	LS
	Residential development would preclude development of potential mineral resources.	LS	None required.	LS
HYDROLOGY AND WATER QUALITY	Peak flow discharge would increase by 16 percent.	PS	Project includes retention ponds to detain peak flows.	LS
	Development of project could result in reduced water quality due to fertilizers, pesticides, and herbicides applied on golf courses and open space areas.	PS	Avoid long-term water quality impacts by careful management of chemical applications and using native vegetation wherever feasible.	LS
	Development would not affect groundwater recharge.	LS	None required.	LS
	Change in channel morphology.	LS	None required.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
VEGETATION, WILDLIFE, AND AQUATIC RESOURCES	Direct loss of 305 acres or 52.8 percent of live oak forest.	S	Establish guidelines to limit number of trees removed and protect oaks from construction and landscaping impacts. Landscape golf course edges, roadsides, and other publicly owned lands with trees and shrubs indigenous to Plan Area. Develop oak reestablishment program.	LS
	Elimination of 54 percent of the blue oaks.	S	Retain a minimum of 50 percent of blue oak woodland in relatively contiguous open space.	LS
	Removal of 52.8 percent of live oak forest.	S	Retain a minimum of 75 percent of live oak forest in open space.	LS
	Overall reduction in wildlife resources.	S	Plant or permit the establishment of riparian vegetation along creeks and retention ponds, landscape roadways and golf courses with native species, plant vegetation of high value to the area's indigenous wildlife, plant trees and shrubbery in deficient portions of blue oak woodland contained within open space, and install artificial water sources in live oak forests and blue oak woodlands.	LS
	Effects on wildlife from loss of creek-side habitats and removal of native streamside vegetation along creeks.	S	Avoid or minimize impacts to creek channels in golf courses and establish native riparian vegetation after construction, establish 100-foot-wide building setbacks for intermittent creeks, permit the establishment of riparian and wetland vegetation in retention ponds and along watercourses, and revegetate with riparian trees and shrubs indigenous to the area.	LS
	Effects on wildlife from removal of riparian vegetation along Carson Creek and its tributaries.	S	Establish a 200-foot-wide buffer zone along Carson Creek.	LS
	Effects on wildlife from loss of fresh-water marshes.	S	Encourage development of riparian and marsh vegetation around retention ponds and develop small alternative sources of water in the golf courses or open space.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
VEGETATION, WILDLIFE, AND AQUATIC RESOURCES (Continued)	Fire management, planting nonnative species, and herbicide application could convert natural vegetation to undesirable nonnative types. Open space would include dirt roads for fuel breaks and access. Certain land uses can prevent or seriously hamper natural regeneration.	PS	Augment the Specific Plan Open Space Plan.	LS
	Wildlife could be subject to harassment and harm by motor vehicles, dogs, and cats.	PS	Specific Plan includes management policies to minimize these impacts.	LS
	Fencing can impede movement of wildlife.	PS	Minimize fencing.	LS
	Large, unbroken tracts of turf or playing fields can impede movement of wildlife.	PS	Maximize cover in open space designations.	LS
	Loss of oak trees and subsequent reduction in acreage of woodland and forest habitats.	PS	Establish guidelines to limit amount of trees removed and protect oaks from construction and landscaping impacts.	LS
	Loss of live oak forest is potentially significant from a countywide wildlife perspective.	PS	Retain 50 percent of live oak forest in open space.	LS
	Indirect losses to creekside habitats.	PS	Establish 100-foot-wide building setbacks for intermittent creeks and establish native riparian vegetation after construction.	LS
	Impacts to tricolored blackbirds.	PS	Encourage the development of riparian and marsh vegetation around retention ponds and along watercourses.	LS
	Mule deer would lose foraging grounds and cover.	PS	Retain extensive, contiguous tracts of oak forest and blue oak woodland in undeveloped open space, enforce leash laws, and minimize fencing to permit movement of wide-ranging wildlife.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
VEGETATION, WILDLIFE, AND AQUATIC RESOURCES (Continued)	Grading and construction activities would increase erosion and sedimentation. Short- and long-term impacts to water quality. Construction-related activities may possibly alter stream channel morphology, thereby affecting fish habitat.	PS	Implement precautionary measures during design and construction to minimize stream degradation. Prepare and implement an erosion and sediment control plan.	LS
	Loss of annual grassland.	LS	None required.	LS
	Direct loss of 386 acres, or 54 percent of blue oak woodland.	LS	None required.	LS
	Effect on wildlife of removal of blue oak woodland.	LS	None required.	LS
	Freshwater marshes, seepages, and stockponds would be eliminated. From a botanical standpoint, this is less than significant because of the small acreage, low diversity of vegetation, and habitats highly altered by livestock.	LS	None required.	LS
	Effect on wildlife of loss of seeps and stockponds.	LS	None required	LS
	Vegetation and wildlife impacts to serpentine chaparral.	LS	None required.	LS
	Impacts to bald eagles and peregrine falcons.	LS	None required.	LS
CULTURAL RESOURCES	Impacts to Sites EDH-26, EDH-29 (Tong Cemetery), and EDH-29 (Historic).	S	Avoid sites.	LS
	Impacts to unknown sites.	PS	Stop work if cultural resources are discovered during construction.	LS
	Impacts to ED-2 (Historic), EDH-2, EDH-4, EDH-5 (Structures), EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic), EDH-13, EDH-15, EDH-21 (Prehistoric), EDH-23, EDH-24, EDH-25, EDH-28, and EDH-29 (Other Historic Features).	PS	Require test excavations as a condition of approval on the tentative subdivision maps.	LS

Table 3-1. Continued

Issue Area	Impacts	Level of Impact[1]	Mitigation Measures[2,3]	Level of Impact After Mitigation[1,4]
CULTURAL RESOURCES (Continued)	Impacts to Hall/Richmond Cemetery.	PS	Protect or relocate.	LS
	Impacts to bedrock mortars and rock walls.	LS	Preserve where feasible.	LS
	Impacts to Clarksville Cemetery.	LS	None required.	LS
AESTHETICS	Onsite views would be significantly impacted as a result of the change in visual resources.	S	Implement open space areas and design guidelines identified in Specific Plan.	LS
	Change in scenic character.	LS	None required.	LS
	Impacts to Carson Creek.	LS	None required.	LS
	Offsite change in views from U. S. Highway 50, El Dorado Hills Blvd., and Bass Lake Road.	LS	None required.	LS
ENERGY CONSERVATION	Increased energy consumption.	S	State law requires compliance with Title 24. Design subdivisions to facilitate solar use.	LS

Environmental Setting, Impacts and Mitigations

Chapter 4
Land Use

Setting

Regional Setting

The regional setting of the Plan Area is characterized by rolling, grassy hills and woodland areas. It is located in the foothills of the Sierra Nevada mountains at elevations 600 feet to 1,200 feet above sea level in western El Dorado County. The Plan Area is approximately 23 miles east of Sacramento, 108 miles east of San Francisco, and 72 miles west of Lake Tahoe (see Figure 2-1).

Local Setting

The Plan Area is located in the community of El Dorado Hills in unincorporated El Dorado County. The general area is bounded by Green Valley Road (north), Bass Lake Road (east), U. S. Highway 50 and White Rock Road (south), and El Dorado Hills Boulevard, Raley's Supermarket, and a golf course (west). Located approximately 2 miles to the north is Folsom Lake. Surrounding communities include White Rock, Clarksville, Cameron Park, Rescue, Shingle Springs, Latrobe, and the City of Folsom.

Existing Land Uses

Existing land uses in the Plan Area include a water tank, Bass Lake, the PGandE/SMUD transmission lines, the Clarksville cemetery, the PGandE Clarksville Substation, and scattered rural residential uses. The Plan Area is bounded by the following land uses:

North: Agricultural pasture land; rolling, grassy hills; rural residential subdivision (5-acre minimum); and Green Valley Road.

East: Agricultural pasture land; rolling, grassy hills; rural residential subdivision (10-acre minimum); and Bass Lake Road;

South: A mobile home park; El Dorado Hills Business Park; agricultural pasture land; rolling, grassy hills; U. S. Highway 50; and White Rock Road.

West: Single-family residential; commercial; Oak Ridge High School; several high density residential villages; Harvard Way; and El Dorado Hills Boulevard.

The community of El Dorado Hills serves primarily as a bedroom community to Sacramento. The commercial area, located at El Dorado Hills Boulevard and U. S. Highway 50, serves as the central commercial area. Raley's is the major retailer with several surrounding businesses. El Dorado Hills currently contains seven "villages" (0.25-acre lot, single-family developments that are internally focused, contain internal circulation, and a neighborhood commercial area).

Planned Land Uses

Relevant Plans and Policies. According to county planning staff (Dunn pers. comm.), the El Dorado County General Plan contemplates the development and use of a number of area plans for certain communities and serves as an overall guide to more specific area plans within the county. Therefore, the relevant goals and policies of the EDH-SF Area Plan are assessed, rather than the county General Plan goals and policies. The Area Plan contains specific goals and policies targeted to future urban growth and development in the El Dorado Hills community. The relevant goals and policies and the Specific Plan's consistency with them are discussed in the "Impacts" section that follows.

El Dorado Hills/Salmon Falls Area Plan. Land use designations for the Plan Area and adjacent lands are shown in Figure 4-1. The majority of the Plan Area is designated on the El Dorado Hills/Salmon Falls (EDH-SF) Area Plan (El Dorado County Planning Department, undated) as High Density Residential (three du per acre unless accompanied by a planned development, in which case five du to the acre will be permitted). The remainder of the Plan Area is designated Commercial, Multi-Family Residential (12 du per acre or 20 du maximum per acre with a Planned Development), Medium Density Residential (one du per 1.0-4.9 acres), and Parks/Recreation. Adjacent land use designations are as follows:

North: Low Density Residential, Medium Density Residential, High Density Residential, and Public Facility.

East: High Density Residential and Medium Density Residential

South: Low Density Residential, Medium Density Residential, High Density Residential, Multi-Family Residential, Industrial, and Open Space/Conservation.

West: Commercial, Multi-Family Residential, High Density Residential, Medium Density Residential, Parks/Recreation, and Public Facility.

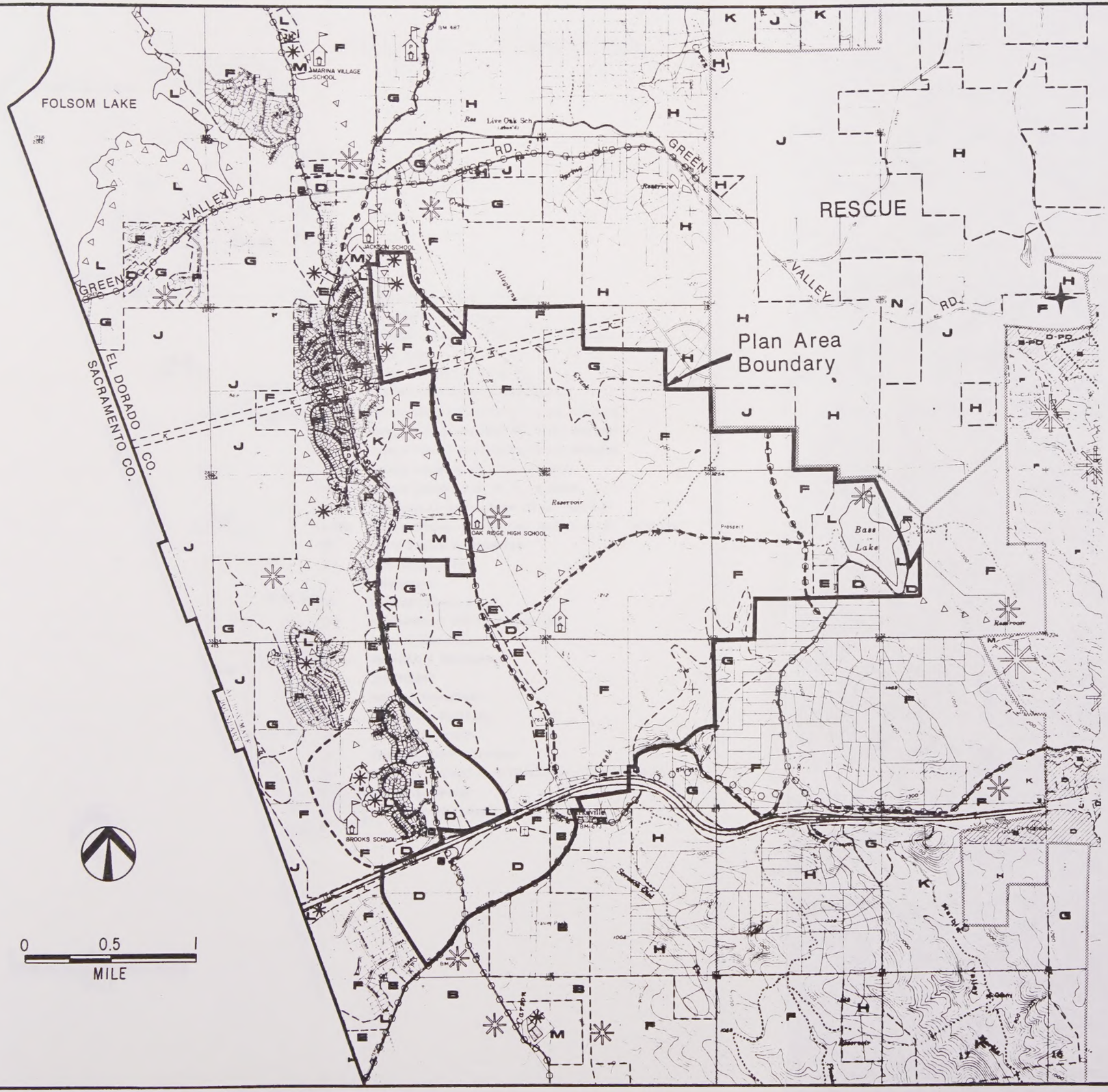


FIGURE 4-1.
AREA PLAN DESIGNATIONS

El Dorado Hills/Salmon Falls Area Plan

- B Industrial
- D Commercial
- E Multi-Family Residential
  12 du maximum per acre
  20 du maximum per acre with PD
- F High Density Residential 5 du maximum per acre
- G Medium Density Residential 1 du/1.0-4.9 acres
- H Low Density Residential 1 du/5.0-9.9 acres
- J Rural Residential Agriculture 1 du/10-160 acres
- K Open Space/Conservation
- L Parks/Recreation
- M Public Facility

Rescue Area Plan

- B Industrial
- C Commercial
- M Public Facilities
- L Parks
- F High Density Residential 4 du per acre
- G Residential 2 ac. minimum parcel
- H Residential Agriculture 5 ac. minimum parcel
- J Residential Agriculture 10 ac. minimum parcel
- N Exclusive Agriculture
- Proposed school sites as shown on the 1969 General Plan

Cameron Park Area Plan

- B Industrial
- D Commercial
- E Multi-Family Residential 3.1-20 du/ac.
- F Single Family Residential
  High Density 1.1-3 du/ac.
  F-PD* 4.2 du/ac.
- G Single Family Residential
  Medium Density 1 du/1.0-4.9 acres
- H Single Family Residential
  Low Density 1 du/5.0-9.9 acres
- J Rural Residential Agricultural
  1 du/10-60 acres
- K Public Facility
- L Open Space/Conservation
- M Parks/Recreation
- Design Control
- PD Requires Planned Unit Development

- FUTURE ROAD EXTENSIONS
- RECREATION & BICYCLE ROUTES
- HIKING & EQUESTRIAN ROUTES
- EXISTING SCHOOLS
- PROPOSED SCHOOL SITES
- EXISTING PARKS
- PROPOSED PARK SITES
- PARK & RIDE

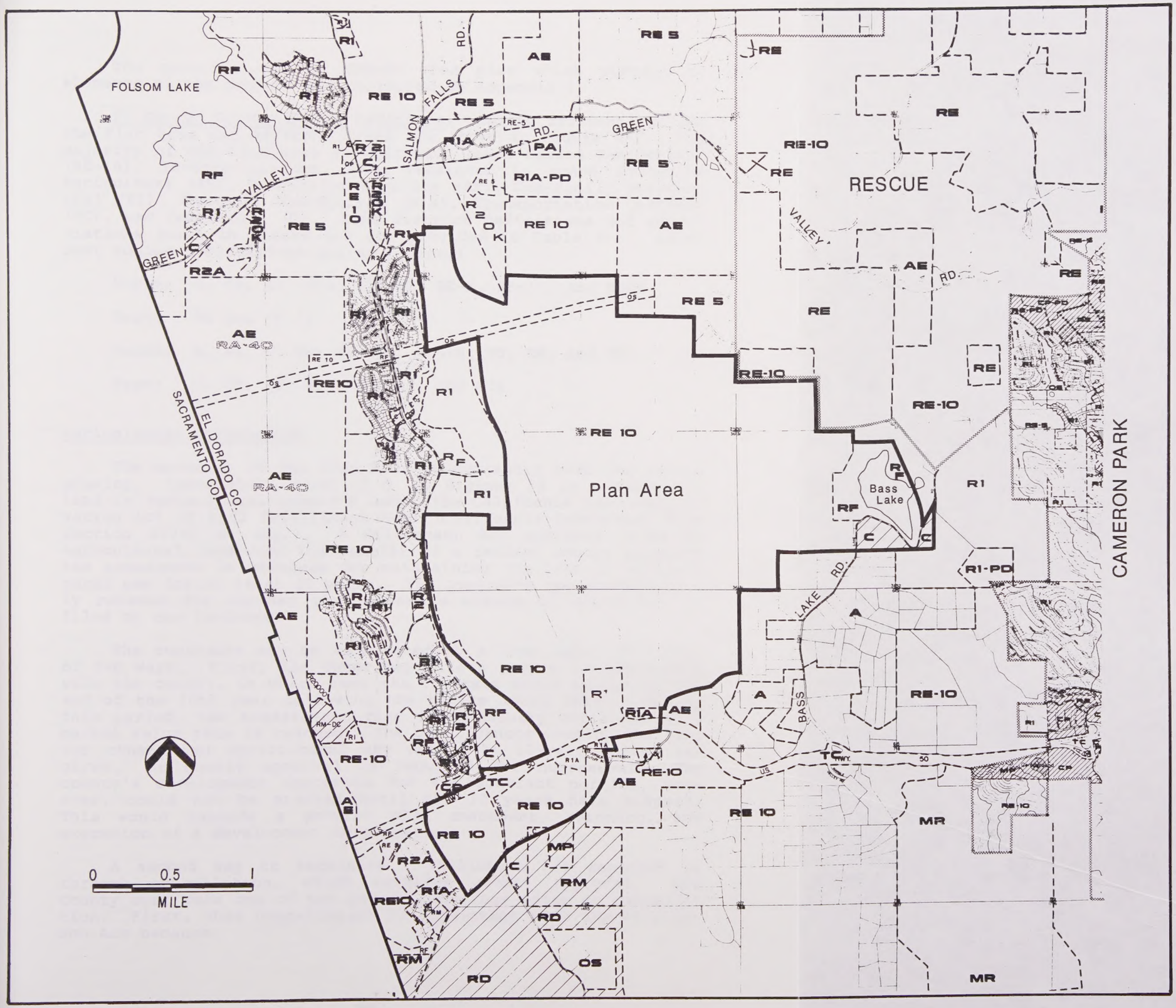


FIGURE 4-2. ZONING MAP

LEGEND

A	Agriculture 10 ac. minimum
AE	Exclusive Agriculture
PA	Planned Agriculture 20-60 ac. minimum
OS	Open Space
R1	Single Family Residential
R2	Limited Multi-Family Residential
R1A	Single Family Residential 1 ac. minimum
R2A	Single Family Residential 2 ac. minimum
R3A	Single Family Residential 3 ac. minimum
RE 5	Estate Residential 5 ac. minimum
RE 10	Estate Residential 10 ac. minimum
RA 20	Residential Agriculture 20 ac. minimum
R 20K	Single Family Residential 20,000 sq. ft. minimum
RM	Multi-Family Residential
MP	Mobilehome Park
C	Commercial
CP	Planned Commercial
CPO	Professional Office Commercial
CG	General Commercial
RD	Research & Development
I	Industrial
MR	Mineral Resources
RF	Recreation Facility
AA	Airport Approach
TC	Transportation Corridor
PD	Requires Planned Unit Development Design Control
	Community Design
	Not Under Williamson Act

The policies of the EDH-SF area plan which pertain to elements of the project are contained in Appendix I.

El Dorado County Zoning Ordinance. Zoning designations for the Plan Area and adjacent lands are shown in Figure 4-2. The majority of the Plan Area is currently zoned Estate Residential (RE-10), 10-acre minimum. The remainder is zoned Exclusive Agriculture (AE), Recreation Facility (RF), One-Family Residential (R1), One-Acre Residential (R1A), Transportation Corridor (TC), and Commercial (C). Zone district definitions and abbreviations shown in Figure 4-2 are provided in Table 4-1. Adjacent zoning designations are as follows:

North: A, PA, R1, R1A, R1A-PD, RE-5, RE-10, and R20K.

East: R1 and RE-10.

South: A, AE, C, MR, MP, OS, RE-10, RD, RM, and TC.

West: C, CP, RF, R1, R1A, R2, and R2A.

Agricultural Information

The majority of the Plan Area is currently used for cattle grazing. Immediately south of U. S. Highway 50 is a parcel of land in agricultural preserve under the California Land Conservation Act of 1965 (Williamson Act) (California Government Code Section 51240 et seq.). A Williamson Act contract gives an agricultural landowner the benefit of a reduced county property tax assessment in exchange for maintaining the land in agricultural use for at least 10 years. The contracts are automatically renewed for another year unless a notice of nonrenewal is filed by the landowner.

The contracts may be terminated by a land owner in either of two ways. First, the owner may file a notice of nonrenewal with the county, in which case the contract would expire at the end of the 10th year following the notice (Buck 1984). During this period, tax assessments rise incrementally until the full market value rate is reached. The owner cannot develop the land for other than agricultural use until the 10-year period expires. No county approval is required for nonrenewal. The county's development approvals for the contract portion, however, could not be granted until the 10 years have elapsed. This would include a general plan amendment, rezoning, and execution of a development agreement.

A second way to terminate a Williamson Act contract is through cancellation, which requires county approval. The county must make one of two sets of findings prior to cancellation. First, that cancellation is consistent with the Williamson Act because:

Table 4-1. Zone District Abbreviations and Definitions

Abbreviation	Zone Type and Description
A	Agricultural District: The purpose of this district is to provide for the orderly development of land having sufficient space and natural conditions compatible with horticultural and agricultural pursuits and to provide protection from the encroachment of unrelated uses tending to have adverse effects on the development of an area. The following uses are allowed by right, without special use permit or variance: one-family detached dwellings, raising and grazing of livestock and other animals, growing of trees, and packing and processing of agricultural products, etc. The following uses are allowed only after obtaining a special use permit: commercial slaughtering of animals, disposal of garbage, construction of schools, golf courses, home occupations, and kennels.
AE	Exclusive Agricultural District: This district applies to those lands subject to the Land Conservation Act of 1965. No building or structure shall be erected. The following uses are allowed by right, without special use permit or variance: raising and grazing of livestock, poultry, or other animals, growing of trees, growing and harvesting of timber, one single-family detached dwelling, signs warning against trepass, and packing and processing of agricultural products, etc. The following uses are allowed after obtaining a special use permit: uses compatible with the Land Conservation Act, gas and oil wells, private noncommercial aircraft, and kennels.
PA	Planned Agricultural District: The purpose of this district is to provide for the orderly development and protection of lands having sufficient space and conditions compatible with horticulture, husbandry, and other agricultural pursuits. The following uses are allowed by right without special use permit or variance: one single-family detached dwelling, home occupations, two unlighted signs, raising and grazing of livestock and other animals, growing and harvesting of trees, packing and processing of agricultural products, and drilling of wells, etc. The following uses are allowed after obtaining a special use permit: commercial slaughtering of animals, the excavation and processing of building materials, mining of minerals and drilling for petroleum, disposal of garbage, construction of fire stations, and private commercial aircraft, etc.
C	Commercial District: The following uses are allowed by right, without special use permit or variance: any use except one-family dwelling and mobile home park. Other allowed uses include: office, places of entertainment, one mobile home to be used exclusively as an office for contractors, appliance store, health facility, and community care facility. The following uses are allowed only after obtaining a special use permit: new and used automobile sales, animal clinic or shelter, mobile home park, airports and heliports.
CP	Planned Commercial District: The following uses are allowed without special use permit or variance only after obtaining approval of the site plan: all uses for the C District.
MR	Mineral Resource District: The purpose of this district is to provide for the orderly development and protection of lands containing mineral resources, and to provide for the protection from encroachment of unrelated and incompatible land uses tending to have adverse effects on the development or use of these so-designated lands. The following uses are allowed by right, without special use permit or variance: one single-family detached dwelling, home occupations, prospecting for and the extraction of minerals for commercial purposes, raising and grazing of livestock and other domestic animals, growing and harvesting of trees, and packing and processing of agricultural products. The following uses are allowed only after obtaining a special use permit: mining, exploring, drilling, using wells, pumps, etc. necessary to production and transportation of oil, gas, and other hydrocarbons, retail and wholesale distributing of materials produced onsite, garaging or parking of trucks and equipment in use onsite, etc.
MP	Mobile Home Park District: The following uses are allowed by special use permit: mobile home parks with accessory structures.
OS	Open Space District: The purpose of this district is to provide a medium whereby the essential open space needs of the citizens of the county may be provided for. "Open space land" means parcels or areas of land which are generally unimproved and devoted to and essential for: natural resource preservation, preservation of agricultural production, preservation of recreational enjoyment areas, preservation of prime or critical wildlife or biotic habitats, protection of public health, and protection of unusual or unique scenic values. The following uses are allowed by right, without special use permit or variance: one single-family dwelling, agricultural and accessory building, the raising and grazing of livestock and other farm animals, growing and harvesting of timber and trees, and signs warning against trespass. The following uses are allowed only after obtaining a special use permit: other buildings and structures, all signs not allowed by right, excavation of earth and drilling, all home occupations, public utility uses, all processing of products produced upon or from the land, all commercial and private organized recreational uses, and airports and aircraft landing fields approved by the California Aeronautics Commission.

Abbreviation	Zone Type and Description
RF	Recreational Facilities District: The purpose of this district is to provide for the orderly development and maintenance of lands and areas suitable and desirable for recreational pursuits, and to protect them from the encroachment of unrelated uses having an adverse impact on this resource. The following uses are allowed by right, without a special use permit or variance: raising and grazing of domestic farm animals, cultivation of tree and field crops, any structure or use incidental or accessory to any of the foregoing uses: drilling of wells, excavation of earth exclusively for authorized purposes on that parcel, subject to the county Grading Ordinance, and local underground distribution lines. The following uses are allowed without a special use permit or variance only by obtaining approval of a complete site plan: picnic areas, ball fields, stables, and golf courses, etc. Uses requiring a special use permit include: any dwellings, eating and drinking establishments, and amusement parks, etc.
R1	One-Family Residential District: The following uses are allowed by right, without a special use permit or variance: one-family detached dwelling, home occupations, public utilities and distribution lines, public parks, excavation of earth, drilling of wells exclusively for residential purposes, and noncommercial accessory uses and buildings. The minimum parcel area is 20,000 sf.
R-20,000 (R20K)	One-Half Acre Residential District: The purpose of this district is to provide for the orderly development of single-family residential land having sufficient space and the natural conditions to enable residents to engage in limited horticultural and agricultural pursuits consistent with conditions conducive to a desirable residential density and environment, and to protect from the encroachment of unrelated uses tending to have an adverse effect on the single-family residential development of the area. The following uses are allowed by right, without special use permit: one single-family detached dwelling, home occupations, drilling of wells, and one unlighted sign. The following uses are allowed only after obtaining a special use permit: place of worship, academic school, nonprofit association clubhouse, public recreational uses, temporary real estate offices, public utility structures, and health facility, etc. Minimum parcel area is 20,000 sf.
R1A	One-Acre Residential District: The following uses are allowed by right, without a special use permit or variance: all of the uses allowed in the R1 District, in addition to one stable, golf course, and guest house. The following uses are allowed after obtaining a special use permit: place of worship, academic school, real estate office, public utility structure, health facility, airports/heliports, and community care facility. The minimum parcel area is 1 acre.
RE-5	Estate Residential Five-Acre Zone District: The purpose of this district is to provide for the orderly development of land having sufficient space and the natural conditions compatible with residential and accessory agricultural and horticultural pursuits, and to provide for the protection from encroachment of unrelated uses tending to have adverse effects on the development of the areas so designated. The following uses are allowed by right, without a special use permit or variance: one single-family detached dwelling, barns, home occupations, raising and grazing of domestic farm animals, the cultivation of field and tree crops, packing and processing of agricultural products, excavation of earth, drilling of wells exclusively for agricultural or residential purposes, and local distribution lines. The following uses are allowed only after obtaining a special use permit: mining of minerals and drilling for petroleum, construction of schools, churches, cemeteries, one real estate office adjacent to properties for sale, airports, heliports, and kennels. The minimum lot area is 5 acres.
RE-10	Estate Residential District: The purpose of this district is to provide for the orderly development of land having sufficient space and the natural conditions compatible with residential and accessory agricultural and horticultural pursuits, and to provide for the protection from encroachment of unrelated uses tending to have adverse effects on the development of the areas so designated. The following uses are allowed by right, without a special use permit or variance: same as uses allowed for RE-5 District. The following uses are allowed only after obtaining a special use permit: same as uses allowed for RE-5 District. The minimum lot area is 10 acres.
R2	Limited Multi-Family Residential District: The following uses are allowed by right, without a special use permit or variance: any use allowed in the R1 District, multiple-family dwellings without limit to the number of units per structure, attached single-family dwellings, and one mobile home. The following uses are allowed only after obtaining a special use permit: any of the uses allowed in the R1 District, place of worship, business, commercial membership club, community care facility, and airports/heliports. The minimum lot area is 6,000 sf.

Abbreviation	Zone Type and Description
RM	Multi-Family Residential District: The following uses are allowed by right, without a special use permit or variance: any use allowed in the R2 District. The following uses are allowed only after obtaining a special use permit: any uses allowed in the R2 District. The minimum lot area is 6,000 sf.
TC	Transportation Corridor District: The purpose of this district is to protect and preserve established and proposed transportation corridors within the county. The following uses are allowed by right, without a special use permit or variance: streets and highways, public transportation facilities, bridges, overpasses, fences, riding, hiking, and bicycle trails. The following uses are allowed only after obtaining a special use permit: single-family residence, harvesting of timber and other forest products, grazing, corrals, snowplay areas, off-street parking, and public and semi-public uses.

Source: El Dorado County Zoning Ordinance Chapter 17.02 General Provisions 1984.

- A notice of nonrenewal has been served;
- Cancellation is not likely to result in the removal of adjacent lands for agriculture;
- The alternative use is consistent with the county general plan;
- A discontiguous pattern of urban development will not result; and
- There is no proximate noncontracted land available and suitable for the proposed use.

An alternative set of findings by a county would be that cancellation is in the public interest because:

- Other public concerns substantially outweigh the purposes of the act as outlined above; and
- There is no proximate noncontracted land available and suitable for the proposed use.

The parcel is not currently owned by EDHI. The parcel is planned for multi-family residential uses. El Dorado County received a request in May 1987 to be withdrawn from the agricultural contract.

Soils Information

According to Rogers (1974), 10 soil types are found in the Plan Area. The soil types and Soil Conservation Service (SCS) Land Capability Classifications are mapped in Chapter 10, "Geology, Seismicity, and Soils," and described in Table 4-2. The SCS Land Capability Classification criteria are presented in Table 4-3. The soils found in the Plan Area are primarily of the Argonaut-Auburn association. These soils are silty and gravelly loams and are characteristically residual shallow soils. Most of the soils are generally unsuitable for cultivation. However, they are suited for grazing, woodland, or wildlife.

Impacts

The purpose of the Specific Plan is to develop in greater detail the potential land uses which could result from development of the area. As detailed in Chapter 2, "Project Description," the Plan Area consists of 4,086 gross acres. The predominant urban land use would be low density residential ranging from 0.25-12.00 du per acre. Residential development is projected to involve 2,184 acres. Other uses would include: commercial (260 acres), schools (60 acres), a village green/

Table 4-2. Soil Types

Map Symbol	Soil Name	Percent Slope	Depth to Bedrock (in inches)	Surface Runoff	Permeability	Erosion Hazard	Available Water-Holding Capacity (in inches)	Effective Root Depth (in inches)	Land Capability Classification[a]	Use
AmD	Argonaut very rocky loam	3-30	20-40	Slow to medium	Very slow	Slight to moderate	2.5-4.0	20-30	VI	Range
AkC	Argonaut gravelly loam	2-15	20-40	Slow to medium	Very slow	Slight to moderate	2.5-4.0	20-30	VI	Range; occasional crops of hay and grain or irrigated pasture
AxD	Auburn very rocky silt loam	2-30	12-26	Slow to medium	Moderate	Slight to moderate	2.0-4.0	12-26	VI	Range; few small areas used as irrigated pasture
AwD	Auburn silt loam	2-30	12-26	Slow to medium	Moderate	Slight to moderate	2.0-4.0	12-26	VI	Range; irrigated pasture and some dryland hay and grain
AxE	Auburn very rocky silt loam	30-50	1-2	Medium to rapid	--	Moderate to high	0.16-0.20	--	VII	Range
AyF	Auburn extremely rocky silt loam	3-70	12-26	Slow to very rapid	--	Slight to very high	2.0-4.0	12-20	VII	Range
PrD	Placer diggings	--	--	--	--	--	--	--	VII	Some value as grazing and wildlife habitat; watering place for livestock
RfD	Rescue very stony sandy loam	15-30	3-5	Medium to rapid	--	High	0.12-0.14	--	VI	Range, pasture, and some woodland
Rk	Rescue clay, clayey variant	<2	40+	Slow	Slow	None to slight	6.0-10.0	25-30	III	Hay and irrigated pasture
SaF	Serpentine rock land	Undulating to very steep	10-24	Very rapid	Excessively drained	Slight to moderate	--	--	VIII	--

Source: Rogers 1974.

[a] See Table 4-3 for a discussion of Land Capability Classifications.

Table 4-3. Land Capability Classifications

Land Suited for Cultivation and Other Uses

Class I: Soils in Class I have few or no limitations or hazards. They may be used safely for cultivated crops, pasture, range, woodland, or wildlife.

Class II: Soils in Class II have few limitations or hazards. Simple conservation practices are needed when cultivated. They are suited to the cultivation of crops, pasture, range, woodland, or wildlife.

Class III: Soils in Class III have more limitations and hazards than those in Class II. They require more difficult or complex conservation practices when cultivated. They are suited to the cultivation of crops, pasture, range, woodland, or wildlife.

Class IV: Soils in Class IV have greater limitations and hazards than Class III. Still more difficult or complex measures are needed when cultivated. They are suited to the cultivation of crops, pasture, range, woodland, or wildlife.

Land Limited in Use, Generally Not Suited for Cultivation

Class V: Soils in Class V have little or no erosion hazard, but have other limitations that prevent normal tillage for cultivated crops. They are suited to pasture, range, woodland, or wildlife.

Class VI: Soils in Class VI have severe limitations or hazards that make them generally unsuitable for cultivation. They are suited to grazing, woodland, or wildlife.

Class VII: Soils in Class VII have very severe limitations and hazards that make them generally unsuitable for cultivation. They are suited to grazing, woodland, or wildlife.

Class VIII: Soils and land forms in Class VIII have limitations and hazards that prevent their use for cultivated crops, pasture, range, or woodland. They may be used for recreation, wildlife, or water supply.

Source: Soil Conservation Service 1975.

community center (27 acres), major streets (139 acres), golf courses (370 acres), and open space (1,020 acres).

Figure 4-3 presents the proposed zoning map for the Plan Area. All of the residential villages are proposed to be zoned R-1/PD with the exception of Village M and Village C Neighborhood 4, which are proposed for R-20,000 (0.50-acre residential lots). The inconsistency between proposed zoning and parcel sizes is considered potentially significant. The Specific Plan, however, stipulates that these two areas will be 0.25 unit per acre (4-acre minimum parcel size), which reduces this impact to a less-than-significant level.

Village J Neighborhood 4 is proposed to be zoned CP, which requires obtaining approval of a site plan from the planning director.

The open space areas are proposed to be zoned Open Space (OS), which is a district to provide for the essential open space needs of the citizenry.

Relevant Plans and Policies

The Specific Plan is consistent with the El Dorado County General Plan. No General Plan amendments are required prior to adoption of the Specific Plan.

Table 4-4 assesses the consistency of the Specific Plan with the EDH-SF Area Plan. The Specific Plan is considered consistent with the adopted goals and policies, including Community Goal E, which is discussed later, and Commercial Policy 3. Commercial Policy 3 states that circulation within a commercial development shall be designed to be internal, with minimal encroachments on public thoroughfares.

Direct Changes in Land Use

Adoption of the Specific Plan would reduce the amount of open space in El Dorado Hills. Conversion from open space to urban uses would be a less-than-significant impact because 25 percent (1,020 acres) would be left as undeveloped open space. In addition, 370 acres would be developed as golf courses, resulting in 34 percent (1,390 acres) of the Plan Area being designated as open space.

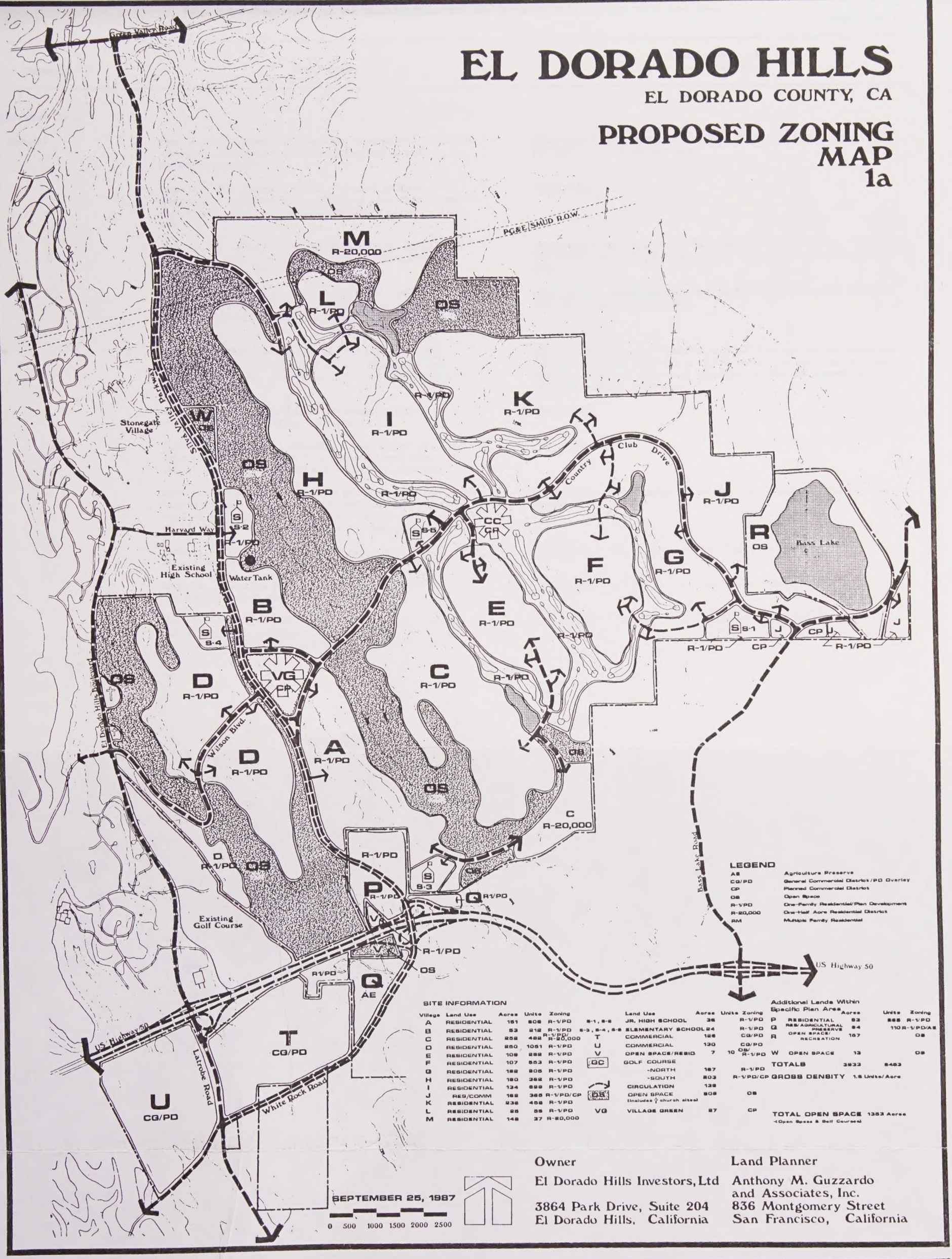
Development would result in the conversion of 3,065 acres of agricultural land to urban uses. Conversion of land to urbanized uses is considered significant and unavoidable.

According to the EDH-SF Area Plan, there are currently 27,235 acres of land used for cattle grazing in the area. The total commercial grazing land is estimated to be 15,000 acres.

EL DORADO HILLS

EL DORADO COUNTY, CA

PROPOSED ZONING MAP 1a



Owner

El Dorado Hills Investors, Ltd

3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner

Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 4-3.
PROPOSED ZONING MAP

Table 4-4. Consistency of the Specific Plan With the El Dorado Hills/Salmon Falls Area Plan

Category	Goal/Policy	Assessment of Consistency
COMMUNITY GOALS		
General	Goal A: The citizens of the Plan Area desire to retain the rural atmosphere while striving for a well-balanced community.	Consistent: Lot sizes in the Plan Area would vary from 0.25 du per acre to 12.0 du per acre.
	Goal B: Local planning efforts should include an integrated, comprehensive community plan that ensures functional, healthy, and aesthetically pleasing land uses.	Consistent.
	Goal C: The integrity of the environment, quality of air, water and noise levels should be considered a priority in all development.	Consistent: See Chapter 8, "Air Quality"; Chapter 11, "Hydrology and Water Quality"; and Chapter 9, "Noise" for further discussion.
	Goal D: Retention of a feeling of open space is desired through provision of open space areas, and consideration of viewsheds, ridgelines, and natural features.	Consistent: Approximately 33.7 percent (1,389 acres) would be open space and golf courses.
	Goal E: Future development should consider the compatibility of land uses, scenic corridors, and retention of basic natural and physical features of the community.	Consistent: Proposed commercial uses (Village T) and proposed residential uses (Village Q) could result in land use conflicts; Specific Plan has a Guiding Principle to buffer commercial areas from residential land uses.
	Goal F: Future residential development should be compatible with existing concepts.	Consistent.
	Goal H: Residential, commercial and industrial land uses should be provided in a suitable area where existing developments are not adversely affected.	Consistent.
	Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows, and that new services and facilities will be developed for future development.	Consistent: See Chapter 6, "Public Services" for further discussion.
	Goal J: Efficient energy usage and conservation should be consistently encouraged in development.	Consistent: See Chapter 15, "Energy Conservation."
	Goal K: Effective emergency and fire protection service is a high priority.	Consistent: See Chapter 6, "Public Services."
	Goal L: A quality circulation system, which safely and efficiently accommodates development and recognizes all transportation modes, is desired for the Area.	Consistent: See Chapter 7, "Transportation and Circulation."

Category	Goal/Policy	Assessment of Consistency
	Goal M: Development for additional recreational facilities through proper planning is a priority to local citizens.	Consistent: Two golf courses are proposed. See Chapter 6, "Public Services."
	Goal N: Quality neighborhood school sites are a priority to local citizens and should be considered as the area grows.	Consistent: School sites are proposed as part of the Specific Plan. See Chapter 6, "Public Services."
POLICIES (EL DORADO HILLS AREA)		
General	Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.	Consistent: To be implemented by the county during the review process.
	Policy 2: Transitional land uses shall be designed into development projects in order to alleviate land use conflicts in differing residential density areas, commercial, industrial, and agricultural areas. Typical transitions may consist of:	
	a. Section 17.06.150, Special Setbacks for Agricultural Protection;	Consistent: No special setbacks are required for agricultural protection. See text for further discussion.
	b. Landscape areas;	Consistent.
	c. Densities between residential developments that blend existing development to the proposed density;	Consistent. See text for further discussion.
	d. Use of natural terrain and vegetation to separate incompatible land uses.	Consistent.
	Policy 4: Public facilities shall be considered in light of future development and growth within the Plan Area. Public use facilities, including but not limited to, will be school sites, public buildings, "park 'n ride" lots, etc.	Consistent: See Chapter 6, "Public Services."

Category	Goal/Policy	Assessment of Consistency
	Policy 5: The Plan has large areas designated for future urban development. These areas may be developed concurrently with the formation of the assessment districts to provide necessary public services. Developers may enter into development agreements with the county in order to meet the objectives of the Area Plan.	Consistent: See Chapter 6, "Public Services."
	Policy 6: Urban designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.	Consistent: See Chapter 6, "Public Services."
	Policy 8: Those lands identified on the Long Range Plan as agricultural lands shall be protected from conflicting land uses by the total implementation of the adopted Agricultural Buffer Ordinance.	Consistent: No lands within or immediately adjacent to the Plan Area are identified on the Long Range Plan as agricultural.
	Policy 9: All parcels 1 acre in size or less shall be required to be supplied with both public water and sewer service. This policy shall only apply to those lands located within the El Dorado Hills portion of this land use plan.	Consistent: See Chapter 6, "Public Services."
	Policy 10: All those areas generally planned for high intensity use (commercial, industrial SFR-HD, Single-Family Residential - High Density and RM, Multi-Family Residential) shall not be rezoned until such time as a commitment for the required services for the requested zoning, e.g., public water and sewer, can be secured from the appropriate agency.	Consistent: See Chapter 6, "Public Services."
	Policy 11: Prior to any high density development occurring which will use Bass Lake Road as its primary access, a road improvement district shall be formed. The purpose of this road improvement district shall be to generate funds for the necessary improvements needed to support the projected traffic use on Bass Lake Road, south to U. S. Highway 50, as outlined within the Land Use plan.	Consistent: See Chapter 7, "Transportation and Circulation."

Category	Goal/Policy	Assessment of Consistency
	Policy 12: To ensure a sufficient vehicular and pedestrian system on commercial, industrial, industrial and multi-family properties, all developments within this land use category shall be required to either improve street frontage, dedicate land for right-of-way, and provide a combination of the above prior to or in conjunction with a site plan approval for issuance of a building permit. Standards shall be developed by the county and be on file at the Planning Department.	Consistent: To be implemented by the county.
	Policy 13: The county shall establish a design review procedure to review construction design, and landscaping and architectural considerations under a design control district for industrial, commercial, and multi-family zones.	Consistent.
	Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:	
	a. During the development, discourage cutting and removal of trees 6 inches in diameter at breast height, other than necessary to place and service structures on a lot, or to protect structures against possible damage from a diseased or hazardous tree.	Consistent: See Chapter 12, "Biological Resources."
	b. Limiting extensive cut-and-fill grading of land which substantially changes the natural grade and watershed.	Consistent: See Chapter 10, "Geology, Seismicity, and Soils."
	c. Limiting modification of natural streambeds and flow.	Consistent: See Chapter 11, "Hydrology and Water Quality," and Chapter 12, "Biological Resources."
	d. Limiting design placement of roadways which create blind and/or dangerous intersections, or which increase hazards for vehicular traffic.	Consistent: See Chapter 7, "Transportation and Circulation."
	e. Limiting densities and lot configurations which do not provide adequate open space and recreational areas.	Consistent: Approximately 33.7 percent (1,389 acres) of the Plan Area would be open space and golf courses.
	f. Limiting the removal or destruction of historical sites.	Consistent: See Chapter 13, "Cultural Resources."

Category	Goal/Policy	Assessment of Consistency
	g. Prohibit lot configurations which do not provide for adequate and proper drainage.	Consistent: See Chapter 11, "Hydrology and Water Quality."
	h. Requiring commercial and industrial subdivisions, complexes, and structures to include adequate landscaping and noise attenuation systems to reduce related business noise and provide a harmonious setting.	Consistent: See Chapter 9, "Noise."
	Residential Policy 1: Public water and sewer shall be required for high density and multi-family residential development.	Consistent: See Chapter 6, "Public Services."
	Policy 2: Residential developments in urban areas shall be developed as "villages" similar to the existing ones:	Consistent.
	a. Projects will be internally focused;	Consistent.
	b. Circulation shall be planned to enhance "village" identity.	Consistent.
	Policy 3: Within the high density land use designation, a maximum of 3 units to the acre shall be allowed unless accompanied by a planned development, in which case five units to the acre will be permitted.	Consistent.
	Commercial Policy 2: Expansion of commercial land uses, beyond what is shown on the land use map, shall be considered when accompanied with a specific development plan and a projected need has been demonstrated.	Consistent.
	Policy 3: Circulation within a commercial development shall be designed to be internal, with minimal encroachments on the public thoroughfares.	Cannot be determined at this time.
	Policy 4: Proposed new commercial development within 1 mile of a school site shall require notification to the school district.	Consistent.
	Policy 5: Commercial land uses shall be required to have public water and sewer.	Consistent: See Chapter 6, "Public Services."

Category	Goal/Policy	Assessment of Consistency
	Policy 6: Commercial subdivisions, complexes, and structures shall be required to include adequate landscaping and noise attenuation systems to reduce related business noise and provide a harmonious setting.	Consistent: See Chapter 9, "Noise."
	Recreation Policy 1: The El Dorado Hills Community Service District Recreation Master Plan and the El Dorado County Recreation Element of the General Plan shall be the guideline for future park and trail developments.	Consistent: See Chapter 6, "Public Services."
	Policy 2: A regional park should be developed in the future, east of El Dorado Hills Boulevard, south of the SMUD utilities easement.	Consistent: See Chapter 6, "Public Services."
	Circulation Policy 1: Future road extensions outlined on the Land Use Map shall be constructed as areas develop.	Consistent: See Chapter 7, "Transportation and Circulation."
	Policy 2: A traffic circulation study shall be prepared and implemented for the Plan Area which considers the land uses adopted by this Plan.	Consistent: See Chapter 7, "Transportation and Circulation."
	Policy 3: A specific traffic study shall be prepared for El Dorado Hills, Francisco Drive, and Green Valley Road. "Area of Benefit" type districts shall be considered, along with other means of financing which may be available, to accomplish those recommended improvements as identified with the study.	Consistent: See Chapter 7, "Transportation and Circulation."
	Policy 4: Transportation alternatives, which are cost-effective, shall be strongly encouraged. A transit system linking employment and shopping areas with residential areas should be studied as the area grows. El Dorado Hills Boulevard and U. S. Highway 50 shall be designated Transportation Corridors.	Consistent: See Chapter 7, "Transportation and Circulation."
	Policy 5: Bus stops shall be considered for inclusion into new developments.	Consistent: See Chapter 7, "Transportation and Circulation."
	Policy 6: Potential "park 'n ride" lots, as identified on the land use map, shall be considered with the development of those parcels.	Consistent: See Chapter 7, "Transportation and Circulation."

Table 4-4. (Continued)

Category	Goal/Policy	Assessment of Consistency
	Historical Preservation Policy 1: Significant historical sites located within the Plan Area boundaries shall be protected. Upon application for a development, historical sites shall be identified and a means by which they will be protected shall be provided.	Consistent: See Chapter 13, "Cultural Resources."

Source: El Dorado Hills/Salmon Falls Area Plan, undated.

The remaining acreage (11,000 acres) is not suitable for grazing because of the existence of either chaparral vegetative cover or rural residential development. Conversion would result in a 11.0 percent reduction in areawide acreage devoted to grazing. Grazing is the only existing agricultural use of the Plan Area. Loss of agricultural use of the land is considered a less-than-significant impact.

Land Use Compatibility

Compatibility of Plan Elements Within the Plan Area. Community Goal E states that future development should consider the compatibility of land uses. The spatial relationship of Village T (commercial) and Village Q (residential) located immediately south of U. S. Highway 50 could result in land use conflicts. Commercial uses would generate a substantial amount of traffic, dust, noise, and glare from lights (see Chapter 7, "Traffic and Circulation," Chapter 8, "Air Quality," and Chapter 9, "Noise," for further discussion). In addition, vandalism and trespass from adjacent residential uses could impact the commercial uses. These impacts are considered potentially significant.

The Specific Plan reduces this potentially significant impact to a less-than-significant level by a Plan Policy, which states that commercial areas should be buffered from adjacent residential land uses both within and beyond the Plan Area by landscaping, setbacks, drainage easements, open space easements, streets, grade separations, or a combination of these features.

Implementation of the Specific Plan would designate the Clarksville cemetery, located south of U. S. Highway 50 immediately north of Village T, as residential. According to the county zoning ordinance, the cemetery would be a permitted use in the R1A, R3A, RE-5, and the RE-10 Zoning Districts. Therefore, this is considered a less-than-significant impact.

The spatial relationship of the remaining uses would result in less-than-significant land use conflicts due to the large amount of open space, roads, and golf courses.

Compatibility With Adjacent Land Uses. According to the county zoning ordinance and General Plan, the existence of residential uses immediately adjacent to Williamson Act land is considered an incompatible land use and could require special agricultural setbacks. Implementation of the Specific Plan would result in open space uses immediately adjacent to Williamson Act land on the north, Village Q (residential) uses on the east, and U. S. Highway 50 on the south. The General Plan requires a residential zoning of a 10-acre minimum if the agricultural land is tangent to an incompatible land use at two corners. This is considered a less-than-significant impact

because the owner has applied for withdrawal from the contract, the majority of land immediately adjacent to the Williamson Act land would be open space, and residential uses would not be tangent at two corners.

The zoning ordinance requires special setbacks for agricultural protection if the parcel is immediately adjacent to timberland, horticultural, or high density livestock uses. This is considered a less-than-significant impact because the parcel is not adjacent to these uses.

The Specific Plan proposes residential uses (Villages M, K, and J) immediately adjacent to RE-5 (one du per 5-acre minimum) and R2A (one du per 2-acre minimum) zoning. According to the EDH-SF Area Plan, densities between residential developments shall blend existing development/zoning to the proposed density. Village M proposes 0.25 du per acre and Villages J and K propose densities ranging from 0.25 to 4.00 du per acre. This is considered a less-than-significant impact because project design blends densities.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

Mitigation Measures Recommended by the EIR Consultant

None.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to land use are included in Appendix I.

Chapter 5
Population, Housing and Employment

Population

Setting

Existing Population and Recent Trends. The Plan Area is located in the western portion of El Dorado County near the City of Folsom and other urban areas of Sacramento County. The Plan Area currently contains only a few homes, located at the southern end of the Plan Area. Since the Plan Area is virtually uninhabited, the setting discussions throughout this chapter focus on the jurisdictions within the vicinity of the project, including El Dorado County, Sacramento County, and the City of Folsom.

El Dorado County. Regional population trends are shown in Table 5-1. The population of El Dorado County increased by 75.7 percent from 1970 to 1980, growing from 48,833 to 85,812. El Dorado County's 1986 population was estimated to be 106,093, representing a 23.6 percent increase over its 1980 population.

The project is contained within the EDH-SF Plan Area. From 1970 to 1980, the population of this area of the county increased from 2,300 to 5,459, representing a population increase of 137 percent (El Dorado County Planning Department n.d.). In 1980, the EDH-SF Plan Area contained 6.4 percent of El Dorado County's population.

Sacramento County. Sacramento County's percentage growth rate has been outpaced by El Dorado County's growth rate since 1970. The population of Sacramento County increased by 23.5 percent from 1970 to 1980, and by 15.6 percent from 1980 to 1986 (Table 5-1). Sacramento County's 1986 population was estimated to be 905,473.

City of Folsom. The Plan Area's nearest urban neighbor, the City of Folsom, is Sacramento County's fastest growing city. From 1970 to 1980, the City of Folsom grew from 5,810 to 11,003, representing an 89.4 percent increase. Folsom's 1986 population was estimated to be 17,031, representing a 54.8 percent increase since 1980.

Table 5-1. Population of El Dorado County, Sacramento County, and the City of Folsom: 1970, 1980, and 1986

Political Subdivisions	1970[a]	1980[a]	1986[b]	Percent Growth 1970-1980	Percent Growth 1980-1986
El Dorado County	48,833	85,812	106,093	75.7	23.6
Sacramento County	634,373	783,381	905,473	23.5	15.6
City of Folsom	5,810	11,003	17,031	89.4	54.8

Sources: [a] Bureau of the Census 1983.

[b] California Department of Finance 1986a.

Projected Population

El Dorado County. Population projections to the year 2000 for El Dorado County and neighboring jurisdictions are shown in Table 5-2. The population of El Dorado County is projected to grow to 158,500 by the year 2000. This 49.4 percent increase over existing population represents an average annual increase of 3.5 percent, which is approximately half the 7.3 percent average annual growth rate experienced by El Dorado County between 1970 and 1986. The western side of El Dorado County is expected to capture much of the county's future population growth.

Sacramento County. The population of Sacramento County is projected to grow to 1,186,600 by 2000, representing a 31 percent increase over existing population, and an average annual growth rate of 2.2 percent. The projected growth rate is lower than the county's 2.7 percent average annual growth rate between 1970 and 1986.

City of Folsom. The City of Folsom is projected to continue its brisk growth through the year 2000, though at a slightly slower pace. Folsom is projected to grow to 26,382 by 2000, representing a 54.9 percent increase. The projected annual average growth rate of 3.9 percent is considerably lower than the 12 percent average annual growth rate experienced by Folsom between 1970 and 1986.

Population Characteristics

El Dorado County. Household and income characteristics for the populations of El Dorado County, Sacramento County, and the City of Folsom are shown in Table 5-3.

In 1980, El Dorado County contained 32,505 households, of which an estimated 1,760, or 5.4 percent, were located in the EDH-SF Plan Area (El Dorado County Planning Department n.d.). The average number of persons per household in El Dorado County was 2.62 in 1980. The California Department of Finance (1986a) estimates that average household size had increased to 2.69 by 1986.

Approximately two-thirds of El Dorado County's 1980 households were headed by married couples. One-person households accounted for approximately 19 percent of the households, and female heads of families accounted for 6.8 percent of the households.

According to the 1980 census, median annual household income in El Dorado County was $17,513, which was higher than the median annual household income in Sacramento County and Folsom. Persons living below the poverty level represented 8.7 percent of El Dorado County's population in 1980.

Table 5-2. Population Projections for El Dorado County, Sacramento County, and the City of Folsom to 2000

Political Subdivisions	1986	1990	1995	2000	Percent Increase 1986-2000
El Dorado County	106,093[a]	123,100[b]	141,100[b]	158,500[b]	49.4
Sacramento County	905,473[a]	993,300[b]	1,092,600[b]	1,186,600[b]	31.0
City of Folsom	17,031[a]	20,600[c]	23,282[c]	26,382[c]	54.9

Sources: [a] California Department of Finance 1986a.

[b] California Department of Finance 1986b.

[c] Sacramento Area Council of Governments 1984.

Table 5-3. Population Characteristics of El Dorado County, Sacramento County, and the City of Folsom: 1980

	El Dorado County	Sacramento County	City of Folsom
Total households	32,505	300,182	3,682
Total families	23,725	206,817	2,739
Persons per household	2.62	2.56	2.46
Household composition			
One person (number/percent)	6,141/18.9	74,789/24.9	818/22.2
Two + persons: (number/percent)			
Married couple	20,705/63.7	163,278/54.5	2,267/61.6
Male, no wife	799/ 2.5	8,808/ 2.9	92/ 2.5
Female, no husband	2,221/ 6.8	33,845/11.3	351/ 9.5
Nonfamily	2,639/ 8.1	19,085/ 6.4	154/ 4.2
Median annual household income	17,513	17,390	16,444
Per capita income	7,968	7,950	7,043
Percent below poverty level	8.7	11.2	9.6

Source: Bureau of the Census 1983.

Median annual income in the EDH-SF Plan Area was considerably higher than the countywide median annual income. In 1980, median annual family income in the EDH-SF Plan Area was $30,682, which was approximately 50 percent higher than the countywide median annual family income of $20,182.

Sacramento County. Sacramento County contained 300,182 households in 1980. Average household size increased from 2.56 in 1980 to an estimated 2.59 in 1986 (California Department of Finance 1986a).

Sacramento County had a smaller proportion of married couple households, and a larger population of one-person households and female-headed family households in 1980 compared to El Dorado County. Approximately 54.5 percent were headed by married couples. One-person households accounted for 24.9 percent of the households, and female-headed families accounted for 11.3 percent of the households.

Median 1980 annual household income was $17,390 in Sacramento County. Approximately 11.2 percent of the county's population lived below the poverty level in 1980.

City of Folsom. Folsom contained 3,682 households in 1980. Average household size increased from 2.46 in 1980 to 2.59 in 1986 (California Department of Finance 1986a).

Household composition in Folsom was similar to household composition in El Dorado County in 1980. Married couples accounted for 61.6 percent of Folsom's households, with one-person households accounting for 22.2 percent, and female-headed families accounting for another 9.5 percent of the households.

Folsom's 1980 median annual household income of $16,444 was lower than the median annual income of El Dorado and Sacramento Counties. Approximately 9.6 percent of Folsom's population lived below the poverty level in 1980.

Impacts

Development of the Plan Area would generate considerable new population growth.

Direct Population Growth. Residential development would generate direct population growth within the Plan Area. The population of the Plan Area at buildout would depend on the average number of persons residing in each housing unit. In 1980, El Dorado County had an average population per household of 2.62 (Bureau of the Census 1983); the EDH-SF Plan Area had an average population per household of 3.34 (El Dorado County Planning Department n.d.). Because of the difference in average household size, estimates using both population-per-household figures of Plan Area population are provided.

Based on an average household size of 2.62, the development of 7,346 housing units would generate a projected population of 19,247. This population increase represents an 18 percent increase over El Dorado County's 1986 estimated population of 106,093 (California Department of Finance 1986a).

An average household size of 3.34 generates a projected population of 24,536. This increase represents a 23 percent increase over the county's 1986 estimated population.

Indirect Population Growth. Commercial development within the Plan Area would generate indirect population growth through the creation of new jobs. Population growth would be associated with three categories of project-related employment growth: onsite, direct employment; secondary employment; and induced employment.

Direct employment would be generated by commercial developments in Villages J, U, and T, and the Village Green/Community Center. Businesses operating in these commercial areas would employ a projected 3,130 persons (see employment impacts in this chapter). Based on an average population per worker ratio of 2.23 in El Dorado County in 1980 (Bureau of the Census 1983), the direct employment would support a projected 6,980 persons. The net population increase in El Dorado County associated with the direct employment would be much less than 6,980, since many of the new jobs would be filled by current residents of El Dorado County and eastern Sacramento County. Many of these jobs would also be filled by future residents of the Plan Area. These two factors would decrease the potential for employment-related population growth in El Dorado County.

Commercial activity within the Plan Area would generate indirect and induced employment effects (see employment impacts). Indirect and induced employment would generate additional population growth in the areas in which the employment occurs. Most of this employment would occur outside of El Dorado County, and the accompanying population growth would be spread throughout the region and state. The population effect in El Dorado County from indirect and induced employment would be slight.

Impact of Project on Population Characteristics. Population growth within the Plan Area would have no noticeable adverse effect on population characteristics within El Dorado County. The planned middle- to upper-end residential development and recreational amenities offered by the project would attract moderate- to upper-income families and professional single householders. This type of population growth would probably increase the percentage share of family and married couple households in El Dorado County. The cost of housing in the Plan Area would also probably lead to household incomes in the Plan Area being higher than countywide average household incomes.

Summary. The project represents an 18-23 percent increase over El Dorado County's 1986 estimated population potentially adding from 19,247-24,536 people. The impact of inducing this substantial growth is considered significant and unavoidable.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Recommended by the EIR Consultant. None.

Mitigation Measures Required by County Policy. None.

Housing

Setting

Current Housing Stock and Recent Housing Growth

El Dorado County. In 1980, El Dorado County contained 44,987 housing units. Approximately 12 percent of these units were seasonal, primarily recreational units. The housing stock increased to an estimated 53,376 units by 1986, representing an average annual increase of 1,398 units, or 3.1 percent (California Department of Finance 1986a).

Housing in the EDH-SF Plan Area was estimated to be 1,815 units, or 4 percent of the county's housing stock, in 1980 (El Dorado County Planning Department n.d.). The Specific Plan Area currently contains several residential structures.

Sacramento County. Sacramento County's housing stock increased from 323,434 housing units in 1980 to an estimated 370,896 housing units in 1986 (California Department of Finance 1986a). The average annual growth of the county's housing stock over this 6-year period was 7,910 units, or 2.4 percent.

City of Folsom. Folsom's status as Sacramento County's fastest-growing city is reflected in the growth of its housing stock. From 1980 to 1986, Folsom's housing stock increased from 3,996 units to an estimated 5,816 units, representing an average annual growth rate of 303 units, or 7.6 percent.

Housing Characteristics. Characteristics describing a given housing stock include types of units, occupancy status, vacancy, and price. Comparisons of these characteristics for El Dorado County, Sacramento County, and Folsom are presented in Table 5-4.

El Dorado County. The composition of El Dorado County's housing stock is predominantly single-family units.

Table 5-4. Housing Characteristics for El Dorado County, Sacramento County, and the City of Folsom

	El Dorado County	Sacramento County	City of Folsom
Number of housing units (1986)	53,376	370,896	5,816
Composition of the housing stock (1986): (number/percent)			
Single-family units	42,459/79.5	244,620/66.0	4,346/74.7
2-4 units per structure	3,085/ 5.8	35,595/ 9.6	445/ 7.7
5 or more units per structure	4,266/ 8.0	78,750/21.2	361/ 6.2
Mobile homes	3,566/ 6.7	11,931/ 3.2	664/11.4
Vacancy (1986) (number/percent)	14,270/26.7	27,733/ 7.5	537/ 9.2
Occupancy status (percent occupied units, 1980):			
Owner occupied	67.4	60.4	69.3
Renter occupied	32.6	39.6	30.7
Price (1980):			
Median value of owner-occupied homes	$83,950	$63,300	$65,600
Median contract rent	$ 285	$ 215	$ 197

Sources: California Department of Finance 1986a for 1986 data.
Bureau of the Census 1983 for 1980 data.

Approximately 80 percent of the county's 1986 housing stock was estimated to be single-family units, with multi-family (two or more units per structure) accounting for only 14 percent of total units. El Dorado County has a large number of mobile homes used as residences. Mobile homes comprised almost 7 percent of the county's 1986 housing stock.

The predominance of single-family homes is even more notable in the EDH-SF Plan Area. According to the 1980 Census, approximately 94 percent of the area's dwelling units were single-family units.

El Dorado County has historically had a high housing vacancy rate. The high vacancy rate is primarily attributable to the large number of seasonal recreational residences located in the mountain recreation areas of the county, particularly in the Lake Tahoe Basin. In 1980, El Dorado County had a vacancy rate of 27.7 percent; however, after excluding seasonal housing units, the county's vacancy rate was 18.3 percent. The county's 1986 total vacancy rate was estimated to be 26.7 percent, indicating that the county's housing vacancy situation has changed little since 1980.

The housing vacancy rate is generally lower in the western portions of the county. The EDH-SF Plan Area had a housing vacancy rate of 7.7 percent in 1980 (El Dorado County Planning Department n.d.).

The occupancy status of El Dorado County's housing stock was dominated by homeowners in 1980. Approximately two-thirds of the county's occupied housing units were occupied by homeowners, with the remaining one-third occupied by renters.

The cost of housing in El Dorado County has generally been higher than the cost of housing in Sacramento County. In 1980, the median value of a house in El Dorado County was $83,950, compared to $63,300 in Sacramento County. El Dorado County's median contract rent of $285 was also considerably higher than Sacramento County's median contract rental rate of $215.

Housing on the west side of El Dorado County is generally higher in cost than countywide housing. In 1980, the median value of a home in the EDH-SF Plan Area was $98,200 compared to $83,950 countywide.

Sacramento County. The composition of Sacramento County's housing stock is more varied than the housing stocks of El Dorado County or Folsom. Approximately 66 percent of Sacramento County's 1986 housing stock was estimated to be single-family units, compared to almost 80 percent in El Dorado County and 75 percent in the City of Folsom. Multi-family units comprise a much larger part of Sacramento County housing stock.

Sacramento County's housing vacancy rate has changed little since 1980. The county's 1986 vacancy rate was estimated to be 7.5 percent compared to 7.3 percent in 1980.

Sacramento County's large share of multi-family housing is reflected in the occupancy status of its housing stock. In 1980, approximately 60 percent of the county's occupied housing units were occupied by homeowners, with the remaining 40 percent occupied by renters. Owner occupancy was much more common in El Dorado County and the City of Folsom.

The median value of owner-occupied homes in 1980 in Sacramento County was $63,300; median contract rent was $215. According to The Sacramento Bee (1987), the 1986 median value of owner-occupied homes in Sacramento County had increased to $84,220. Average monthly rent was estimated to be $408.

City of Folsom. The composition of the City of Folsom's housing stock is dominated by single-family homes and mobile homes. Approximately 75 percent of Folsom's 1986 housing stock was estimated to be single-family units, with mobile homes accounting for 11 percent. Only 14 percent of the city's housing units were multi-family units.

Folsom's housing vacancy rate was 8.3 percent during the 1980 U. S. Census. Folsom's 1986 vacancy rate was estimated to be 9.2 percent, compared to 7.5 percent overall in Sacramento County.

The occupancy status of Folsom's 1980 housing stock was very similar to the occupancy status in El Dorado County. Owner occupancy accounted for almost 70 percent of Folsom's housing stock compared to 67 percent in El Dorado County.

The median value of owner-occupied homes in 1980 in Folsom was $65,600; median contract rent was $197. The cost of housing in Folsom has increased substantially since 1980. According to The Sacramento Bee (1987), the acreage cost of a new home in Folsom currently ranges from $90,000 to $175,000. Average monthly rent was estimated to be $439 in 1986.

Regional Housing Allocation Plan for El Dorado County. State law requires councils of governments to prepare regional housing allocation plans for areas within their jurisdictions. The Sierra Planning Organization (SPO) acts as the Council of Governments for a four-county area that includes El Dorado County. SPO prepared El Dorado County's most recent housing allocation plan in 1984 to correspond with the county's updated general plan housing element.

The purpose of the regional housing plan is to determine the housing needs of persons at all income levels over a specified period of time. The projected number of additional housing units needed at various income levels is intended to be goals or

targets for jurisdictions, and is to be considered when jurisdictions update their housing elements.

SPO's most recent housing allocation plan for El Dorado County projected housing needs for the period 1983-1990. The methodology and assumptions SPO used to arrive at its allocation are not discussed here; however, the basic approach was to determine the percentages of households falling in four income categories (based on 1980 U. S. Census data), then to apply the percentages to household projections provided by the California Department of Finance. The income categories are set by the California Housing and Community Development Department, and are as follows (income figures represent 1980 income levels):

Very Low Income: 0-50 percent of median family income
(less than $8,761/year)

Low Income: 51-80 percent of median family income
($8,762-$14,017/year)

Moderate Income: 81-120 percent of median family income
($14,018-$21,026/year)

Above Moderate Income: Above 120 percent of median family income
(greater than $21,026/year)

SPO's housing allocation for El Dorado County is shown in Table 5-5. The figures represent the number of housing units projected to be needed in each area and in each income group, and do not include second homes and recreational housing units.

The allocation calls for approximately 90 percent of additional county housing units built or rehabilitated between 1983 and 1990 to be located in the unincorporated west slope area (the area west of the crest of the Sierra Nevada range). The Plan Area is located within the unincorporated west slope area.

Within the county, the allocation calls for 25 percent of the new housing units to be allocated to very low income households; 16 percent to be allocated to low income households; 23 percent to be allocated to moderate income households; and 36 percent to be allocated to above moderate income households. Within the unincorporated west slope area, approximately 64 percent of the new units are to be allocated to moderate and above moderate income households.

Maximum home prices and rental rates affordable for the SPO housing allocation income groups are shown in Table 5-6. The affordable housing prices and rental rates reflect affordability based on 1980 median household income for El Dorado County. Income in the EDH-SF Plan Area was approximately 50 percent higher than median countywide income in 1980 (Bureau of the Census 1983).

Table 5-5. Sierra Planning Organization
1983-1990 Housing Allocation

	NET CHANGE				
	Very Low	Other Lower	Moderate	Above Moderate	TOTAL
Unincorporated West Slope	2,986	1,900	3,122	5,564	13,572
Placerville	175	96	128	133	532
Balance of County	257	176	203	247	883
Total County	3,747	2,398	3,447	5,395	14,987

Source: Sierra Planning Organization 1984.

Note: Columns add horizontally, but not vertically, due to changes in income group breakdown in jurisdiction.

Table 5-6. Maximum Home Prices and Rental Rates Affordable for Housing Allocation Income Groups

Income Category	Income[a] Range	Affordable[b] Monthly Mortgage Payment or Rent	Affordable[c] Home Price
Very low income	Less than $8,671	Less than $217	Less than $23,500
Low income	$8,762-$14,017	$218-$350	$23,500-$38,500
Moderate income	$14,018-$21,026	$351-$525	$38,501-$57,500
Above moderate income	Greater than $21,026	Greater than $525	Greater than $57,500

[a] Based on income categories from the El Dorado County Regional Housing Allocation Plan (Sierra Planning Organization 1984).

[b] Affordability based on mortgage payment or rent (including insurance and property taxes) not exceeding 30 percent of gross monthly income.

[c] Based on 10 percent downpayment, 30-year fixed-rate mortgage, 10 percent annual interest rate, and annual insurance and taxes equal to 1.5 percent of the purchase price.

Relevant Housing Policy Objectives. In 1984, El Dorado County adopted an updated general plan housing element. The element contains a number of policy objectives designed to help the county meet its housing element goals. The following policy objectives are those relevant to the proposed project. The proposed project's consistency with the policy objectives is discussed later in this section.

1. The county will actively pursue the attainment of the SPO regional housing need requirement.

3. Promote the provision of safe comfortable housing for groups with special needs, such as the elderly, handicapped, or single heads of households with low to moderate incomes.

8. In an effort to reduce traffic impacts, transportation costs and provide additional housing opportunities, mixed-use zoning will be supported in appropriate commercial and industrial areas.

10. The county will encourage the construction of rental housing units for all economic segments of the community.

Impacts

Housing Stock Growth. Buildout of the Plan Area would add an additional 7,346 housing units to El Dorado County's housing stock. The county's housing stock with the Plan Area housing would total 60,722 units, representing a 13.8 percent increase over existing countywide housing (Table 5-7). Assuming a 20-year buildout period, residential development within the Plan Area alone would increase the county's housing stock at an average rate of approximately 0.6 percent per year.

Plan Area development would substantially increase the amount of housing in the EDH-SF Plan Area. The EDH-SF Plan Area's housing stock in 1980 was estimated to be 1,815 units. Development of the Plan Area would increase this to 9,161 units.

Project-Related Impacts on Housing Stock Characteristics.

Composition. The Plan Area would be comprised of residential villages, varying in housing unit number, type, and density.

Single-family detached residential units would represent the predominant housing type within the Plan Area, accounting for approximately 77 percent of the Plan Area's housing. These units would be on detached parcels, and would include view lots, executive homes, fairway estates, ranch estates, and view estates.

Table 5-7. El Dorado County Housing Stock with Plan Area Housing

	El Dorado[a] County Existing Housing Units (1986)	Plan Area Housing Units (Buildout)	Total Units	Percentage Increase
Single-family units	42,459	5,688	48,147	13.4
Multi-family units (2 or more units per structure)	7,351	1,658	9,009	22.5
Mobile homes	3,566	0	3,566	0
Total units	53,376	7,346	60,722	13.8

[a] Source: California Department of Finance 1986a.

Multi-family attached housing units (patio homes and townhouses) would account for the remaining 23 percent of Plan Area housing. Most of these units would border the golf couse fairway in Villages F, G, and I. The attached units would be located in cluster patterns with common open space and recreation facilities.

Residential lot sizes would vary, ranging from 4-acre estates to multi-family lots at 12 units per acre. The gross residential density within the Plan Area would be 1.80 residential units per acre; however, densities within individual villages would range from 0.25 to 12.0 dwelling units per acre (Table 2-2).

Residential development within the Plan Area would add 5,688 single-family units and 1,658 multi-family units to El Dorado County's housing stock. The additional units would increase single-family housing by 13.4 percent, and multi-family housing by 22.5 percent within the county (Table 5-7).

Vacancy. As discussed earlier under "Setting", the countywide vacancy rate has historically been high because of the large number of seasonal residential units within the county; however, vacancy in the EDH-SF Plan Area has been relatively low. Development of the Plan Area should not lead to a long-term increase in housing vacancy rates unless the demand for housing in the Folsom-El Dorado Hills area decreases over the next 10-20 years. Development of the El Dorado Hills Business Park should ensure that the demand for housing in the El Dorado Hills area will remain relatively strong. (See "Jobs-to-Housing Relationship" at the end of this chapter).

Price. The sales prices of housing to be constructed in the Plan Area is not known at this time; however, the upscale nature of the proposed project, with its large estate, view, and golf course lots, and recreational amenities, would probably ensure relatively high housing prices. A recent article in The Sacramento Bee (1987) reported that the current average selling price of homes in the El Dorado Hills area ranges from $130,000 to $350,000. Housing prices within the Plan Area would probably fall into this range, depending on lot size, location, and housing type.

Employment-Based Demand for Housing. Jobs created by commercial developments within the Plan Area would generate population growth and an accompanying demand for housing in the area. Onsite commercial development would create an estimated 3,130 jobs, which could potentially support an estimated 6,980 persons (see population impacts section of this chapter). Based on average household sizes of 2.62 and 3.34, onsite employment could generate a housing demand ranging from a projected 2,089 to 2,664 units.

As discussed in the employment impacts section of this chapter, the relatively low wages associated with many of the probable onsite jobs indicates that these jobs would be suited for young wage earners, part-time and student wage earners, and second wage earners within a family or household. Most of the onsite jobs would probably be filled by residents of nearby areas, including the Plan Area. This would effectively reduce the onsite employment-based demand for additional housing in the El Dorado Hills area.

Consistency with Regional Housing Allocation Plan. The most recent SPO housing allocation plan for El Dorado County projects housing needs for the period 1983-1990. The allocation calls for 13,572 housing units to be built or rehabilitated in the unincorporated west slope area of El Dorado County by 1990. This allocation indicates an average annual need for 1,939 units in the west slope area, including 427 "very low income" units, 271 "low income" units, 446 "moderate income" units, and 795 "above moderate income" units (Table 5-5).

The rate at which housing would be constructed in the Plan Area is unknown; however, assuming a 20-year buildout schedule, housing would be constructed at an average rate of 322 units per year. Housing in the Plan Area would probably only be affordable for households in the "above moderate income" category (annual income greater than $21,026--see Table 5-6). Plan Area housing would therefore help the county meet approximately 40 percent of its "above moderate income" housing allocation. Plan Area housing would not be affordable for households in the other income categories.

Consistency with Relevant Housing Policy Objectives. The Plan's consistency with relevant policy objectives from El Dorado County's general plan housing element (1984) is discussed below.

1. The county will actively pursue the attainment of the SPO regional housing requirement.

- Partially consistent. Plan Area housing would help the county meet its regional housing need requirement for "above moderate income" housing. See the preceeding discussion on consistency with regional housing allocation plan.

3. Promote the provision of safe comfortable housing for groups with special needs, such as the elderly, handicapped, or single heads of households with low to moderate incomes.

- Inconsistent. The Specific Plan does not discuss providing housing for groups with special housing needs. In addition, Plan Area housing would probably not be affordable for low-to-moderate income households.

8. In an effort to reduce traffic impacts, transportation costs and provide additional housing opportunities, mixed-use zoning will be supported in appropriate commercial and industrial areas.

- Consistent. The Plan Area would contain three commercial areas that would provide convenient access to retail goods and services for Plan Area residents. The Plan Area is also near to the El Dorado Hills Business Park, and could provide housing for employees of the industrial park.

10. The county will encourage the construction of rental housing units for all economic segments of the community.

- Inconsistent. The Specific Plan makes no provision for housing, such as apartment units, available specifically for rental purposes.

Summary. The project represents a 13.8 percent increase over existing countywide housing, adding 5,688 single-family units and 1,658 multi-family units. The impacts of additional housing is considered less than significant and no mitigation is required. The project is inconsistent with the county Housing Element Policy Objectives 3 and 10. This conflict with adopted policies is considered significant. To reduce to a less-than-significant level, the county must ensure that adequate housing is constructed elsewhere in the county.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Suggested by the EIR Consultant

Ensure that Adequate Housing is Constructed Elsewhere in the County. El Dorado County must ensure that adequate housing is available for rental housing and for groups with special needs, such as the elderly, handicapped, or single heads of households with low to moderate incomes.

Mitigation Measures Required by County Policy. None.

The goals and policies of the EDH-SF Area Plan which relate to population are included in Appendix I.

Employment

Setting

Employment by Industry

El Dorado County. Much of the county's economic activity centers around the tourism industry. During the summer months, El Dorado County's mountains, lakes, and gold country historical sites draw visitors from outside of the county. Winter months draw skiing enthusiasts to the county's ski resorts. During a given year, more than 50 percent of the employment is in the services and trade industries, much of which is related to tourism (California Employment Development Department 1986b).

Employment in the county for 1985 is shown in Table 5-8. As is typical, the services and retail trade sectors accounted for 51.3 percent of the jobs. The government sector is the county's third largest employer, accounting for 22.4 percent of 1985 employment. The remaining 26.3 percent of the county's employment was spread among the other six major industrial sectors.

Very few jobs currently exist in the EDH-SF Plan Area. The area has historically been used for livestock grazing, and most employment has been related to low-intensity agricultural production.

Substantial new employment could be generated by future development in the El Dorado Hills Business Park, located just southwest of the Plan Area. Development of the 909-acre business park site is expected to include assembly plants, research laboratories, warehouses, and business offices. Employment in the business park is projected to reach 23,000 by the year 2000 (Planning Answers 1986).

Sacramento County. Sacramento County's economy, though much more diversified than El Dorado County's economy, depends heavily on government sector employment. Government sector employment, led by state government employment in the City of Sacramento, and Mather and McClellan Air Force Base employment in the county, accounted for approximately 33 percent of the employment in Sacramento County in 1985. The services and retail trade sectors are also important employment sources, together accounting for approximately 40 percent of the county's employment in 1985. The remaining 27 percent of the county's 1985 employment was spread among six major industrial sectors, with the construction; manufacturing; and finance, insurance and real estate sectors experiencing considerable recent employment growth.

Table 5-8. Annual Average Wage and Salary Employment in El Dorado County and Sacramento County: 1985

Industries	El Dorado County Number	El Dorado County Percent of Total	Sacramento County Number	Sacramento County Percent of Total
Agriculture, forestry, and fishing	2,800	0.7	300	1.3
Construction and mining	20,200	5.3	1,600	6.9
Manufacturing	23,500	6.2	1,500	6.5
Transportation and public utilities	16,100	4.3	700	3.0
Wholesale trade	18,300	4.8	500	2.1
Retail trade	72,200	19.1	5,900	25.4
Finance, insurance, and real estate	23,500	6.2	1,500	6.5
Services	78,800	20.8	6,000	25.9
Federal, state, and local government	123,200	32.6	5,200	22.4
TOTALS	378,600	100.0	23,200	100.0

Source: California Employment Development Department 1986a, 1986b.

City of Folsom. Employment in Folsom in 1986 was estimated by the City of Folsom to be approximately 6,300 persons (Kortick pers. comm.). Folsom has recently experienced an influx of firms in the high tech/research and development field. Approximately one-third of Folsom's employment is estimated to be in this industrial sector (Jones & Stokes Associates, Inc. 1986).

Employment by Occupation. The occupational employment of the El Dorado County, Sacramento County, and City of Folsom resident work force in 1980 is shown in Table 5-9.

El Dorado County. The majority of El Dorado County's 1980 work force was employed in five occupational categories. The managerial and professional specialty occupations accounted for a combined 23 percent of the employed work force, followed by service occupations (21 percent); administrative support/clerical (14 percent); precision production, craft, and repair service occupations (13 percent); and sales (12 percent).

Sacramento County. Larger proportions of Sacramento County's 1980 work force were employed in managerial/professional specialty and administrative support/clerical occupations, compared to El Dorado County. The managerial/professional occupations accounted for a combined 25 percent of Sacramento County's resident work force, followed by the administrative support/clerical occupations at 23 percent. The three remaining major occupational categories included sales (11.4 percent); precision production, craft, and repair services (11.4 percent); and services (11.1 percent).

City of Folsom. The occupational employment of Folsom's work force in 1980 was similar to Sacramento County's as a whole, with the same five major occupational categories dominating. The primary difference was that a greater proportion of Folsom's work force was employed in precision production, craft, and repair service occupations.

Labor Force Characteristics. Labor force characteristics for El Dorado County, Sacramento County, and the City of Folsom are shown in Table 5-10.

El Dorado County. El Dorado County's resident labor force grew from 37,100 in 1980 to 50,500 in 1985, representing a 5-year increase of 36 percent. During that same time, the county's unemployment rate decreased from 9.2 percent to 7.0 percent (California Employment Development Department 1986a). El Dorado County had an average of approximately 1.34 wage earners per household in 1985.

Much of El Dorado County's labor force worked outside of the county in 1980. Approximately 21.8 percent of the labor force worked in areas of California other than El Dorado County, with most of these persons working in Sacramento County.

Table 5-9. Employment of Resident Labor Force by Occupation: El Dorado County, Sacramento County and City of Folsom: 1980

Occupation	El Dorado County		Sacramento County		City of Folsom	
	Number	Percent	Number	Percent	Number	Percent
Executive, administrative, managerial	4,515	11.8	42,195	12.4	437	12.2
Professional specialty	4,243	11.1	43,938	13.0	379	10.6
Technicians and related support	723	1.9	11,521	3.4	162	4.5
Sales	4,745	12.4	38,664	11.4	328	9.2
Administrative support, including clerical	5,276	13.8	76,666	22.6	724	20.2
Private household	224	0.6	1,646	0.5	0	0
Protective service	993	2.6	5,274	1.6	148	4.1
Service, except protective and household	8,002	20.9	37,602	11.1	415	11.6
Farming, forestry, and fishing	952	2.5	6,272	1.8	57	1.6
Precision production, craft, and repair services	5,096	13.3	38,520	11.4	518	14.5
Machine operators, assemblers, and inspectors	1,038	2.7	12,214	3.6	130	3.6
Transportation and material moving	1,312	3.4	12,157	3.6	139	3.9
Handlers, equipment cleaners, helpers, and laborers	1,192	3.0	12,222	3.6	142	4.0
TOTALS	38,311	100.0	338,891	100.0	3,579	100.0

Source: Bureau of the Census 1983.

Table 5-10. Labor Force Characteristics:
El Dorado County, Sacramento County,
and City of Folsom

	El Dorado County	Sacramento County	City of Folsom
Size of resident labor force (1985)[a]	50,500	441,800	5,545
Percent unemployed (1985)[a]	7.0	6.7	N.A.
Average number of wage earners per household (1985)[b]	1.34	1.32	1.17
Work location (1980):[c] (percent)			
Worked in county of residence	62.8	92.3	86.4
Worked outside of county	21.8	6.3	12.4
Worked outside of state	15.4	1.4	1.2
Mean travel time to work (minutes)[c]	21.1	19.7	23.3

Sources: [a] California Employment Development Department 1986a, 1986b.
[b] Estimated using household data from California Department of Finance 1986a.
[c] Bureau of the Census 1983.

Note: City of Folsom resident labor force size estimated using 1980 ratio of labor force to population. 1985 unemployment data for Folsom was not available.

Another 15.4 percent of El Dorado County's labor force worked outside of California. Most of those persons worked in the Lake Tahoe and Carson City area of Nevada.

Sacramento County. Sacramento County's resident labor force grew from 372,500 in 1980 to 441,800 in 1985, representing a 5-year increase of 19 percent. The county's unemployment rate fell from 9.0 percent in 1980 to 6.7 percent in 1985. Sacramento County had an average of approximately 1.32 wage earners per household in 1985.

Sacramento County's resident labor force worked primarily within the county in 1980. Only 7.7 percent of the county's labor force worked outside of the county in 1980.

City of Folsom. Folsom's resident labor force grew from 3,871 in 1980 to an estimated 5,545 in 1985, representing a 5-year increase of 43 percent. Folsom's unemployment rate has not been estimated since the 1980 U. S. census, when the rate was 7.5 percent. This rate was lower than the unemployment rates in Sacramento and El Dorado Counties in 1980. Folsom had an estimated average of 1.17 wage earners per household in 1985.

Folsom had approximately 14 percent of its resident labor force working in areas outside of Sacramento County in 1980. Approximately one-quarter of these persons worked in El Dorado County.

Impacts

Project-Related Employment

Direct Employment. Commercial development in Villages J, U, and T and the Village Green/Community Center would directly generate employment within the Plan Area. Development in Village J would include a neighborhood shopping center on a 4-acre site. Probable businesses would include a grocery store, drug store, variety store, barber/beauty shop, and a restaurant/coffee shop (Wade Associates 1987). Assuming a floor coverage ratio of 20 percent, 35,000 square feet (sf) of retail space would be developed in this shopping center, generating a projected 70 permanent, onsite jobs (Table 5-11).

Development in Villages U and T would include a regional shopping center and highway-related commercial uses. Probable businesses locating on this 256-acre site would include major department stores, sporting goods stores, a home improvement center, automotive services, a hotel, restaurants, and home furnishing stores (Wade Associates 1987). A projected 1.5 million sf of commercial space would be developed on this site, generating a projected 3,000 permanent, onsite jobs (Table 5-11).

Table 5-11. Permanent Employment Generated by Commercial Uses in the Plan Area

Commercial Area	Projected[a] Development	Square Feet[b] Per Employee	Direct[b] Employment	Indirect[b] Employment	Induced[b] Employment	Total Permanent Employment
Village J	35,000 sf	500 sf	70	35	79	184
Villages U and T	1,500,000 sf	500 sf	3,000	1,500	3,375	7,875
Community Center	30,000 sf	500 sf	60	30	67	157
TOTALS	1,565,000 sf	500 sf	3,130	1,565	3,521	8,216

[a] Source: Villages U and T and the Village Green/Community Center, Wade Associates 1987; Village J projected assuming floor coverage ratio of 0.2.

[b] Source: Jones & Stokes Associates, Inc., CH2M Hill, and Keyser Marston, Inc. 1984.
Indirect employment = direct employment x 0.5.
Induced employment = (direct + indirect employment) x 0.75.

The Village Green/Community Center would include additional commercial space, intended for local-serving services and retail uses. Commercial uses would be limited to businesses such as a bakery, cafe, bank, and a dry cleaning establishment (Wade Associates 1987). A projected 30,000 sf of commercial space would be available, generating a projected 60 permanent, onsite jobs (Table 5-11).

In summary, commercial development would generate a projected total of 3,130 direct, permanent jobs.

Operation and maintenance of the Plan Area golf course would also generate direct employment; however, this employment has not been projected.

Indirect Employment. Businesses operating in the Plan Area would generate indirect employment through a demand for goods and services from other businesses operating throughout the regional, state, and national economy. Most of the project-related, indirect employment would be located outside of El Dorado County, since most of the businesses providing these goods and services are located in and around major urban centers. A projected total of 1,565 indirect jobs would be generated by project-related commercial uses (Table 5-11).

Induced Employment. The expenditures of project-related direct and indirect employees would generate an additional round of employment in the local and regional economy. This induced employment would primarily be generated in the consumer goods and services sectors, and would be located near the residential locations of the direct and indirect employees. A projected 3,521 induced jobs would be generated by project-related direct and indirect employment (Table 5-11). A small portion of the induced employment would occur in El Dorado County.

Construction-Related Employment. Temporary, construction-related employment would be generated by residential and commercial development within the Plan Area. The project proposes the development of 5,688 single-family homes, 1,658 multi-family units, and an estimated 1,565,000 sf of commercial space.

Projections of project-related construction employment were prepared assuming construction values of $100,000 per single-family unit, $70,000 per multi-family unit, and $60 per sf of commercial space. Actual construction values are not known at this time, and could be either higher or lower. Assumptions used to develop the projections are shown in Table 5-12.

Construction-related employment is projected to total 8,155 person-years of employment. This employment would be spread over a number of years. According to the project

Table 5-12. Construction-Related Employment Generated by Development of the Plan Area

	Single-Family Units	Multi-Family Units	Commercial Development	Total
Number of units or sf	5,688 du	1,658 du	1,565,000 sf	
Value per unit or sf	$100,000/du	$70,000/du	$60/sf	
Total value of construction (in thousands)	$523,400	$84,980	$93,900	$702,280
Total value to labor[a]	36%	36%	36%	
Average construction worker salary[a]	$31,000	$31,000	$31,000	
Person years of construction employment	6,078	987	1,090	8,155

[a] Source: Construction Industry Research Board and McDonald & Associates in Nichols-Berman, Angus McDonald & Associates, and Omni-Means, Ltd 1985.

developer, construction could, at the earliest, begin by the Spring of 1988. Buildout could be completed in the range of 10 to 20 years. Actual buildout would depend on infrastructure implementation and prevailing market conditions (Holloway pers. comm.). Assuming a 20-year buildout schedule, Plan Area development would generate 408 person-years of average annual construction-related employment.

Type of Jobs Generated by the Project. Virtually all of the employment generated by onsite commercial uses would be related to retail sales and consumer services. Typical jobs in the retail sector would include sales clerks, stockroom clerks, cashiers, and store managers. The highway commercial uses, including service stations, restaurants, and a hotel, would typically generate jobs for waiter/waitresses, cooks, automobile mechanics, and motel/hotel cleaners, clerks and managers. Development of the Plan Area would also generate jobs for construction workers.

The California Employment Development Department (1986b) collects and publishes data for various occupations within El Dorado. Typical entry level wages for jobs expected to be generated within the Plan Area were as follows for the fourth quarter of 1985: cashier/checker, $7.41-$11.46/hour (union); general merchandise salesperson/sales clerk, $3.35-$3.75/hour; motel clerk, $4.00-$6.50/hour; motel cleaner, $3.35-$4.50/hour; waiter/waitress, $3.35/hour plus tips; restaurant cook, $4.00-$7.00/hour; automobile mechanic, $4.00-$8.00/hour; and construction worker, $7.93-$11.90/hour (union). These wages are typical and would not necessarily represent wages paid for onsite jobs. Higher-salaried managerial positions would also be available within the Plan Area.

The relatively low wages associated with many of the probable jobs indicates that these jobs would be suited for young wage earners, part-time and student wage earners, and second wage earners within a family or household. Most of these jobs would probably be filled by residents of nearby areas, including the Plan Area. Managerial and skilled labor positions would probably require an immigration of qualified workers from outside of the immediate El Dorado Hills area. These workers could relocate into the Plan Area or nearby residential areas, or could commute from other areas within the Sacramento region.

Summary. The project would generate a projected total of 3,130 direct, permanent jobs; 1,565 indirect jobs; and over 8,000 person-years of employment. The impact of increased employment is considered less than significant and no mitigation is required.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Recommended by the EIR Consultant. None.

Mitigation Measures Required by County Policy. None.

The goals and policies of the EDH-SH Area Plan which relate to employment are included in Appendix I.

Jobs-to-Housing Relationship

An increasingly important issue concerning development in the Sacramento region deals with the relationship between the creation of new jobs and the adequacy of the region's housing supply. Consideration of this relationship is necessary to ensure that adequate housing is located near job centers within the region. A lack of adequate housing near job centers forces employees to commute long distances, which leads to traffic congestion, air pollution, and upward pressure on housing prices near job centers. In addition, a lack of adequate housing for employees discourages prospective businesses from locating in an area.

Several job centers exist in the Sacramento region, including the downtown Sacramento area, the Point West-Arden area, the Natomas/Northgate area, the south Placer County area, and the Highway 50 Corridor area. The Plan Area is considered part of the Highway 50 Corridor due to its proximity to Highway 50 and the office and industrial jobs located along Highway 50 in eastern Sacramento County. The relationship of jobs to housing in the Highway 50 Corridor was analyzed by Wade Associates (1986) in a report entitled "Employment Generated Housing Demand in the Highway 50 Corridor." This section summarizes the Wade Associates report and discusses the proposed project's impact on the relationship of jobs to housing in the Highway 50 Corridor area.

Setting

Location. For the purposes of the Wade Associates study, the Highway 50 Corridor is defined as the area bounded by Madison Avenue/Placerville Road on the north, Watt Avenue/Manlove Road on the west, El Dorado Industrial Park on the east, and Jackson Highway/Elder Creek Road on the south (see Figure 5-1). Principal employment centers within the corridor area are located at the interchanges at Watt Avenue, Bradshaw Road, and Sunrise Boulevard. Other centers currently developing or planned are located in Folsom, Citrus Heights, Florin-Perkins Industrial Area and El Dorado Hills Industrial Park. Employment

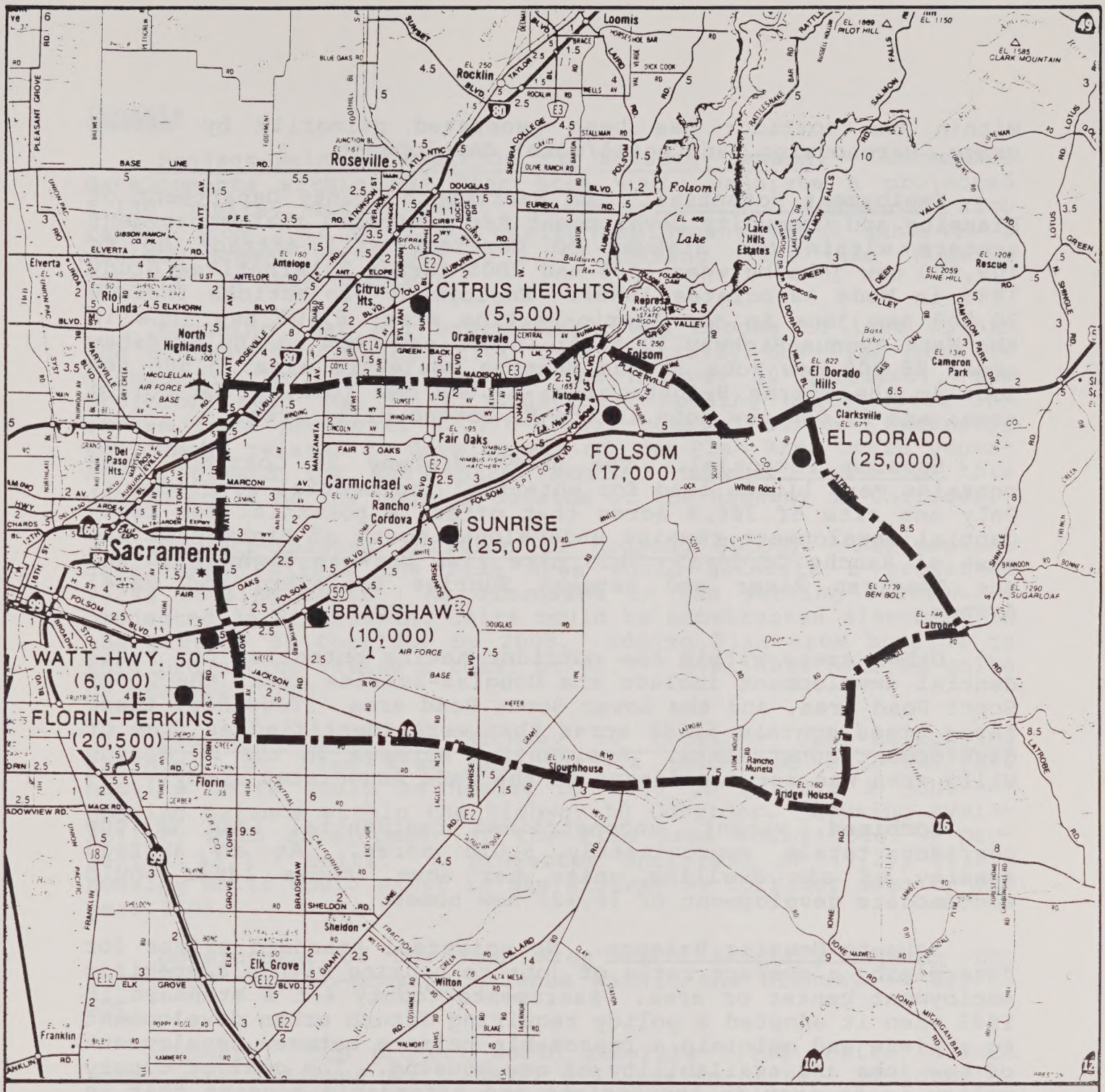


FIGURE 5-1. HIGHWAY 50 CORRIDOR

Source: Wade Associates 1986

within the corridor has been generated primarily by office usage, warehousing, and hotel/motel development.

Employment Potential. The Sacramento County Department of Planning and Community Development has estimated that employment centers within the Highway 50 Corridor will attract up to 109,000 new jobs between 1985 and 2005 (Urban Alternatives Study 1985 in Wade Associates 1986). Employment projections include 20,500 new jobs in the Florin-Perkins area; 6,000 new jobs in the Watt Avenue-Highway 50 area; 10,000 new jobs in the Bradshaw area; 25,000 new jobs in the Sunrise Boulevard area; 5,500 new jobs in the Citrus Heights area; 17,000 new jobs in the Folsom area; and 25,000 new jobs in the El Dorado Hills area.

Housing Potential. The north Highway 50 Corridor area contains very little land for potential residential development. Only one site of 386.8 acres that offers a potential for residential development remains undeveloped north of Highway 50 and east of Rancho Cordova. This site lies between Highway 50 and the American River and between Sunrise Boulevard and Hazel Avenue.

Other areas within the corridor having potential for residential development include the Douglas-Sunrise area, the Upper Scott Road area, and the Lower Scott Road area. Together, these three areas contain 5,685 acres that were identified as free of development constraints. Residential acreage in the El Dorado Hills area was not considered in the Wade Associates study.

Combined, vacant, unconstrained residential land in the corridor totals approximately 6,070 acres. At an average density of six dwelling units per acre, these lands would accommodate development of 36,420 new homes.

Jobs-to-Housing Balance. No universal standard exists for determining a correct ratio of jobs to housing within a specific employment center or area. Sacramento County set a standard in 1982 when it adopted a policy requiring future urban development to achieve and maintain a reasonable balance between development of new jobs and availability of new housing. The goal of county policy is to provide appropriate and affordable housing that is adequate to permit 60 percent of the work force to commute 6 miles or less, one-way, between home and work, and to permit an additional 20 percent of its work force to commute between home and work within 8 miles.

By applying the Sacramento County policy to the employment projections for the Highway 50 Corridor area, an estimated 80,987 new dwelling units would be required to achieve and maintain a future jobs-to-housing balance. After subtracting the corridor's potential for 36,420 new housing units, a shortfall of 44,567 dwelling units would exist in the corridor area by the year 2005.

Impacts

Project-Related Addition to Housing Demand. Commercial developments within the Plan Area would generate a projected 3,130 onsite, direct jobs. Assuming average household size ranges from 2.62 to 3.34, onsite employment would generate a maximum demand for 2,089 to 2,664 housing units (see "Housing Impacts" in this chapter).

Assuming that all onsite employees choose to live within the Highway 50 Corridor (for this analysis, the Plan Area is assumed to be included within the Highway 50 Corridor), the projected need for 80,987 additional housing units would increase to a projected 83,076-83,651 housing units. Secondary employment related to development of the Plan Area could generate a demand for additional housing; however, most of this demand would be for housing outside of the Highway 50 Corridor.

Project-Related Addition to Housing Supply. Residential development within the Plan Area would generate a projected 7,346 housing units. As discussed in the setting section, a projected 36,431 housing units could be constructed elsewhere in the Highway 50 Corridor by 2005. Adding Plan Area housing to this projection yields a total of 43,777 available housing units by the year 2005.

Project Impact on Highway 50 Corridor Jobs-to-Housing Balance. At Plan Area buildout, a projected 83,076-83,651 housing units would be needed by 2005 to achieve a jobs-to-housing balance within the Highway 50 Corridor. Housing availability with development of the Plan Area would total a projected 43,777 units. A projected shortfall of 39,299-39,874 housing units would exist in the Highway 50 Corridor area by the year 2005.

Development of the Plan Area would slightly improve the projected jobs-to-housing balance within the Highway 50 Corridor.

Summary. The project would generate 3,130 onsite, direct jobs, with a demand for 2,089-2,664 housing units. Residential development would provide 7,346 housing units. Development of the Plan Area would slightly improve the projected jobs-to-housing balance within the Highway 50 Corridor. The impact of slightly changing the jobs-to-housing balance is considered less than significant and no mitigation is required.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Recommended by the EIR Consultant. None.

Mitigation Measures Required by County Policy. None.

The goals and policies of the EDH-SF Area Plan which relate to employment are included in Appendix I.

Chapter 6
Public Services and Utilities

This chapter discusses the following public services and utilities: water, wastewater, solid waste, law enforcement, fire protection, schools, parks and recreation, and electrical and gas service.

Water

Setting

The Plan Area would be provided water service by the EID. The EID encompasses nearly all of the Plan Area. Several areas near the northern and southern Plan Area boundaries are not currently within the EID and would be annexed to the district as a prerequisite for providing service (Archuletta pers. comm.). EID currently provides service for about 20,000 customers.

EID currently contracts with the U. S. Bureau of Reclamation to receive 7,550 acre-feet of water per year, primarily from Folsom Lake, with secondary water supply from Jenkinson Lake (Archuletta pers. comm.). Of this total allocation, approximately 1,300 acre-feet (17 percent) were used in 1986, leaving a total entitlement of about 6,250 acre-feet per year for future use (Archuletta pers. comm.).

Water treatment is provided by the El Dorado Hills Water Treatment Plant located near El Dorado Hills. The capacity of this facility is currently 5.9 million gallons per day (MGD). Future planned capacity is 20.3 MGD. During summer months approximately 75 percent, or 4.4 MGD of existing capacity, is used (CH2M Hill 1985).

Existing water system infrastructure has been provided to the Plan Area as part of EID's Assessment District No. 3 (A/D No. 3) improvements. A/D No. 3 was formed to provide for the expansion of water and wastewater facilities in the El Dorado Hills area. The improvement plan for A/D No. 3 involves a 25-year, seven-phase construction project which will provide major transmission, storage, and treatment facilities in the district area. These improvement phases will be installed in conjunction with development in the El Dorado Hills vicinity. Phase 1 improvements are financed by A/D No. 3 with subsequent phases funded by connection fees (Wade and Associates 1987).

Existing water system infrastructure in the Plan Area vicinity consists of a 20-inch-diameter line located in El Dorado Hills Boulevard south of the El Dorado Hills Water Tank, and a 24-inch line exists north of the El Dorado Hills Water Tank. An 18-inch line constructed by A/D No. 3 as part of Phase 1 improvements, bisects the Plan Area. This line connects the line in El Dorado Hills Boulevard with the 3-million-gallon water tank above Oakridge High School and a pump station at Bass Lake. Additional storage facilities, outside the Plan Area boundary, include a 1-million-gallon water tank at Ridgeview and a 1-million-gallon water tank above the El Dorado Hills Business Park. A 3-million-gallon water tank is proposed at the south end of the Plan Area (Village C), as part of A/D No. 3 improvements. Pump stations are located near Bass Lake and in the extreme southeast edge of the Plan Area. A 12-inch line also exists in the vicinity of the southeast Plan Area boundary and connects the Bass Lake pump station with the El Dorado Hills Business Park.

Future EID water system improvements are planned according to a three-phase water supply and transmission improvement plan. This plan describes water system construction over a 40-year period. An interim construction project is also planned for 1987 through 1990. According to a report from EID entitled El Dorado Irrigation District Proposed Major Water System Improvements (undated), interim projects could provide a minimum of 7,000 acre-feet of additional water for use in El Dorado Hills. These proposed improvements are not funded and there is no existing time table for implementation (Wade and Associates 1987).

Impacts

The proposed water system for the Plan Area is shown in Figure 6-1. Most of the water line extensions would be 10- to 12-inch-diameter lines located within the streets. Additional lines would be 6 inches in diameter. The water system would provide seven pressure-reducing stations located in Villages C, H, and I. These improvements would connect with existing and proposed major trunk lines, tanks, and reservoirs as part of EID's A/D No. 3 improvements. Ultimate capacity of the El Dorado Hills water facilities would be capable of handling over 9,000 acre-feet of water supply annually (Archuletta pers. comm.).

All onsite distribution systems would be built to meet county fire flow and pressure requirements. Fire Department water system requirements are based on the Insurance Service Office (ISO) requirements.

Funding for water system improvements in A/D No. 3 was provided by an improvement bond to fund Phase I developments. Phases 2 through 7 will be funded by a supplemental fee on new

EL DORADO HILLS

WATER PLAN

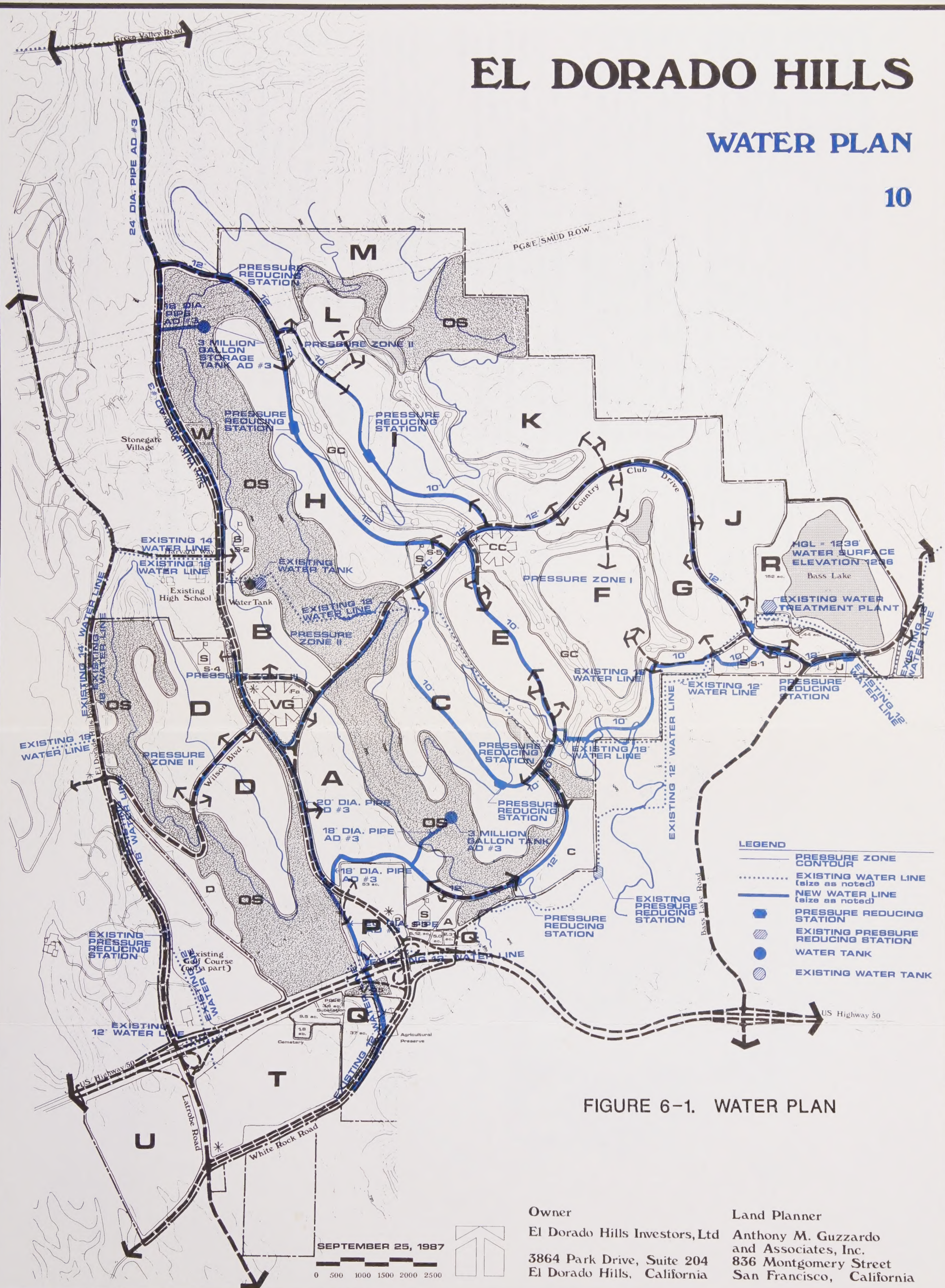


FIGURE 6-1. WATER PLAN

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

construction, an additional assessment district, or a Mello-Roos Community Facilities District (Wade and Associates 1987). Facility costs for construction of Plan Area distribution lines and seven pressure-reducing stations would be about $3,225,000. This estimate is based on a cost of $50 per lineal foot for 61,000 feet of distribution lines, and $25,000 per pressure-reducing station (Wade and Associates 1987). In addition, Plan Area improvements would require funding for the water treatment plant from either AD No. 3's existing sources, or from possible sources indicated above. EID has expressed no problems associated with funding improvements for the Plan Area.

Implementation of the Specific Plan would generate an estimated water demand of 7.1 MGD (see Table 6-1). This estimate is based on a generation factor of 600 gpd per dwelling unit (Archuletta pers. comm.), and various generation factors for commercial, schools, parks, and the golf courses. These estimates are intended only to provide an order of magnitude estimate for water consumption in the Plan Area.

The Plan Area's estimated water demand amounts to over 90 percent of the total existing 7,550 acre-feet per year entitlement, and would exceed the portion of this entitlement that was unused in 1986 (6,250 acre-feet per year). This impact is considered significant and could be reduced to a less-than-significant level by EID developing additional water sources.

Partial mitigation also could be attained by installing water-conserving plumbing fixtures as required by state law, requiring a water conservation landscape program, requiring that all new connections are metered, and possibly requiring other water conservation programs.

The Plan Area water demand would also exceed the capacity of the water treatment plant. The plant currently operates during summer months with about 1.5 MGD of excess capacity. The Plan Area water demand would exceed the plant capacity by about 5.6 MGD. This is a significant impact which could be reduced to a less-than-significant level by EID expanding the treatment plant capacity to 20.3 MGD as planned.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measure is a Plan Policy of the Specific Plan.

Site Development and Grading

f. Landscaping in improved common areas shall be of drought resistant varieties.

Table 6-1. Water Consumption in the Plan Area

Land Use	Acres	Dwelling Units	Generation Factor	Gallons Per Day	Million Gallons Per Day
Residential	2,184	7,346	600 gpd/du[a]	4,407,600	4.41
Commercial	260	--	4,000 gpd/acre[b]	1,040,000	1.04
Schools	60	--	7,000 gpd/acre[b]	420,000	0.42
Parks	26	--	1,000 gpd/acre[b]	26,000	0.03
Golf Courses	370	--	1,000 EDU/18 holes[c]	1,200,000	
TOTALS	2,897	7,346		7,093,600	7.10

[a] Source: CH2M Hill 1984. The Specific Plan uses a generation rate of .67 acre-feet (af) per dwelling unit per year. As 3.07 acre-feet equals 1,000,000 gallons, .67 acre-feet equals 218,241 gallons per year or 598 gallons per day.

[b] Source: Dewante and Stowell 1984 in Sacramento City Planning Department 1987.

[c] Source: Wade and Associates 1987. EDU = Equivalent Dwelling Unit.

h. Landscaping in areas adjacent to natural open space shall be fire resistant.

Golf Course/Country Club Policies

d. Water conservation measures shall be employed in the design and landscaping of the golf courses. In particular, provision shall be made for use of treated wastewater and stored drainage water for irrigation to the maximum extent possible.

Neighborhood Parks

c. Native and drought tolerant trees and shrubs shall be incorporated into the landscape design of parks where feasible.

Mitigation Measures Suggested by the EIR Consultant.

EID Should Develop Additional Water Sources. EID has a number of water supply projects underway, including: the proposed Goldhill Intertie from Sly Park (1,440 acre-feet per year); the Moose Hall project (PGandE forebay), and Crawford Ditch projects that could provide 1,200 acre-feet per year and 7,000 acre-feet per year, respectively; and an undetermined amount of water from the Texas Hill Reservoir (Archuletta pers. comm.). These projects are part of an interim water supply plan intended to provide water until the South Fork of the American River (SOFAR) project is completed. If the SOFAR project can be funded, and developed, it could eventually provide up to 30,000 acre-feet of water per year for EID's long-term water needs (Archuletta pers. comm.).

All of these projects could require considerable infrastructure improvements before water would be available for use in EID's system. Thus, although EID appears to have adequate water rights to serve the Plan Area, these sources would not be available until a system is developed to transport water to the Plan Area (Archuletta pers. comm.). The design, construction, and environmental review of these additional facilities will be the responsibility of EID. It is possible that the project would have to delay construction of various phases to ensure adequate water supplies due to the logistical and procedural problems of providing water from identified sources.

The County should consider requiring proof of ability to serve prior to the recording of final maps. The County could also begin investigating a mechanism or process to use in reserving capacity for individual projects or development areas.

Require a Water Conservation Landscape Program. A landscape water conservation program can provide incentives for low-water-using landscapes in new developments, can help persuade people to convert to low-water-using landscaping, and can

encourage everyone to economize in watering landscapes. Several program options include:

- reducing connection fees for new homes with substantially reduced turf areas;
- planting demonstration gardens on public property or at model homes that demonstrate a variety of attractive low water-using plantings, irrigation methods, permeable walkways, and other water-saving techniques;
- preparing a low-water-using plant list for the Plan Area; and
- preparing a public information package to illustrate the benefits of reduced water bills, less yard maintenance, and attractive landscaping.

Require All New Connections to be Metered. The price of water has an effect on use; the higher the price, the lower the use. Requiring metering would encourage an equitable rate structure where customers would pay according to the actual costs they are imposing on the system. The use of meters and seasonal rates tends to reduce summer water use, allowing agencies to stretch the capacity of existing new treatment and water storage facilities, as well as defer enlargements to its distribution system.

Consider Requiring Other Water Conservation Programs. The developers and EID should consider the costs and benefits of various other water conservation programs, including: public information programs; water conservation educational programs; water audits; and leak detection and repair. Proposed use of treated effluent for golf course irrigation may not be feasible as previously thought (see "Wastewater", below).

EID Should Implement Planned Improvements at the Water Treatment Plant.

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

The goals and policies of the EDH-SF Area Plan which relate to public services/water supply are included in Appendix I.

Mitigation Measure Required by State Law

Install Water-Conserving Plumbing Fixtures. The California Health and Safety Code Section 17921.3 requires that all new buildings install water-efficient water closets and urinals which use a maximum of 3.5 and 1.5 gallons per flush, respectively. Maximum flow rates for shower heads, lavatory faucets, and sink faucets are specified in the California

Administrative Code, as required by Public Resources Code Section 25402 and may not exceed 2.75 gallons per minute at water pressures up to 80 pounds per square inch.

Wastewater

Setting

Wastewater collection and treatment services within the Plan Area vicinity are provided by A/D No. 3 of the EID. A/D No. 3 funds construction of major infrastructure including major trunk lines, pump stations, and treatment plant expansions. Construction of wastewater infrastructure improvements within A/D No. 3 are planned according to a 25-year, three-phase development program.

Existing wastewater collection facilities in the Plan Area include an 18- to 33-inch-diameter gravity pipeline and a 20-inch-diameter force main constructed as part of A/D No. 3 Phase 1 improvements. Other Phase 1 improvements include 12-inch-diameter force mains and a pump station in St. Andrews Village and a 12- to 24-inch-diameter collection line within El Dorado Hills Boulevard south of Oakridge High School. A lift station, located near the high school, conveys sewage to a line in El Dorado Hills Boulevard through a force main. A/D No. 3's three-phase wastewater construction program is intended to serve all development proposed in the Plan Area.

Funding for Phase 1 improvements was provided by an assessment bond. Assessments are apportioned on the basis of equivalent dwelling units (EDUs). Using this funding method, assessments on parcels with approved tentative maps would be based on the number of approved lots (CH2M Hill 1984). Subsequent phases of A/D No. 3 construction will be funded by supplementary connection fees (Archuletta pers. comm.).

The El Dorado Hills Wastewater Treatment Plant is located on Latrobe Road, south of U. S. Highway 50. This plant has a total capacity of 1.6 MGD, and is currently operating at two-thirds capacity (about 0.5 MGD excess capacity). Sewage is subject to secondary treatment with biofiltration, and the effluent is piped to the El Dorado Hills Golf Course for landscape irrigation and to the Golden State Building Products facility for use in production (Wade and Associates 1987, and CH2M Hill 1984).

The plant is being expanded, with completion expected in 1988. This expansion will upgrade treatment capacity to 2.4 MGD with existing (Phase 1) A/D No. 3 funding (Wade and Associates 1987). A/D No. 3 also plans to ultimately upgrade the treatment plant to about 4.1 MGD (Archuletta pers. comm.).

Impacts

The proposed wastewater infrastructure required for Plan Area development is shown in Figure 6-2. All new collection lines would be gravity-fed, ranging in size from 8 to 30 inches in diameter. Lines would be installed in accordance with topography in public streets or within easements on private property. The Plan Area sanitary sewer system involves the installation of 66,250 lineal feet of trunk lines which would connect to lines installed by EID under A/D No. 3. All collector lines would be gravity-fed, with sizes ranging from 8 to 30 inches in diameter. An average of one local lift station would be required for each village. At an average cost of $50,000 per station, the total cost for 14 villages would be $700,000. Sewer line construction at a cost of $50.00 per lineal foot is projected to be $3,312,500.

Total cost of sewer lines and lift stations, including administration, contingencies, engineering, and administration is $4,012,500. These local improvements may be funded by an additional assessment district, by a Mello-Roos District, or by supplemental fees (Wade and Associates 1987).

Implementation of the Specific Plan would generate between 2.77 MGD and 3.27 MGD of wastewater (see Table 6-2). This estimate is also based on a residential generation factor used by EID (100 gpd/capita) (Archuletta pers. comm.), and various generation factors for commercial uses, schools, and parks.

Based on this rough estimate, wastewater generation would exceed the existing wastewater treatment plant capacity (1.6 MGD), as well as the capacity planned for completion in 1 year (2.4 MGD). In addition, the 4.1 MGD capacity that is ultimately planned for the treatment plant could be insufficient to handle combined existing flows and expected Plan Area flows. Combined existing and Plan Area flows could be between 3.7 MGD and 4.3 MGD. This impact is considered significant. To reduce to a less-than-significant level, EID should expand treatment capacities as demand warrants, and continue to reclaim treated effluent for irrigation use at the proposed golf courses. The Specific Plan also proposes to use treated wastewater for irrigation at the golf courses. It should be noted that EID has a contract with Golden State Building Products (GSBP) for delivery of treated effluent. This contract and its commitment to GSBP could result in insufficient reclaimed water for EDHI golf course irrigation. These potentially competing uses will need to be reconciled to ensure adequate treated effluent is available.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Recommended by the EIR Consultant.

EL DORADO HILLS

SEWER PLAN

11

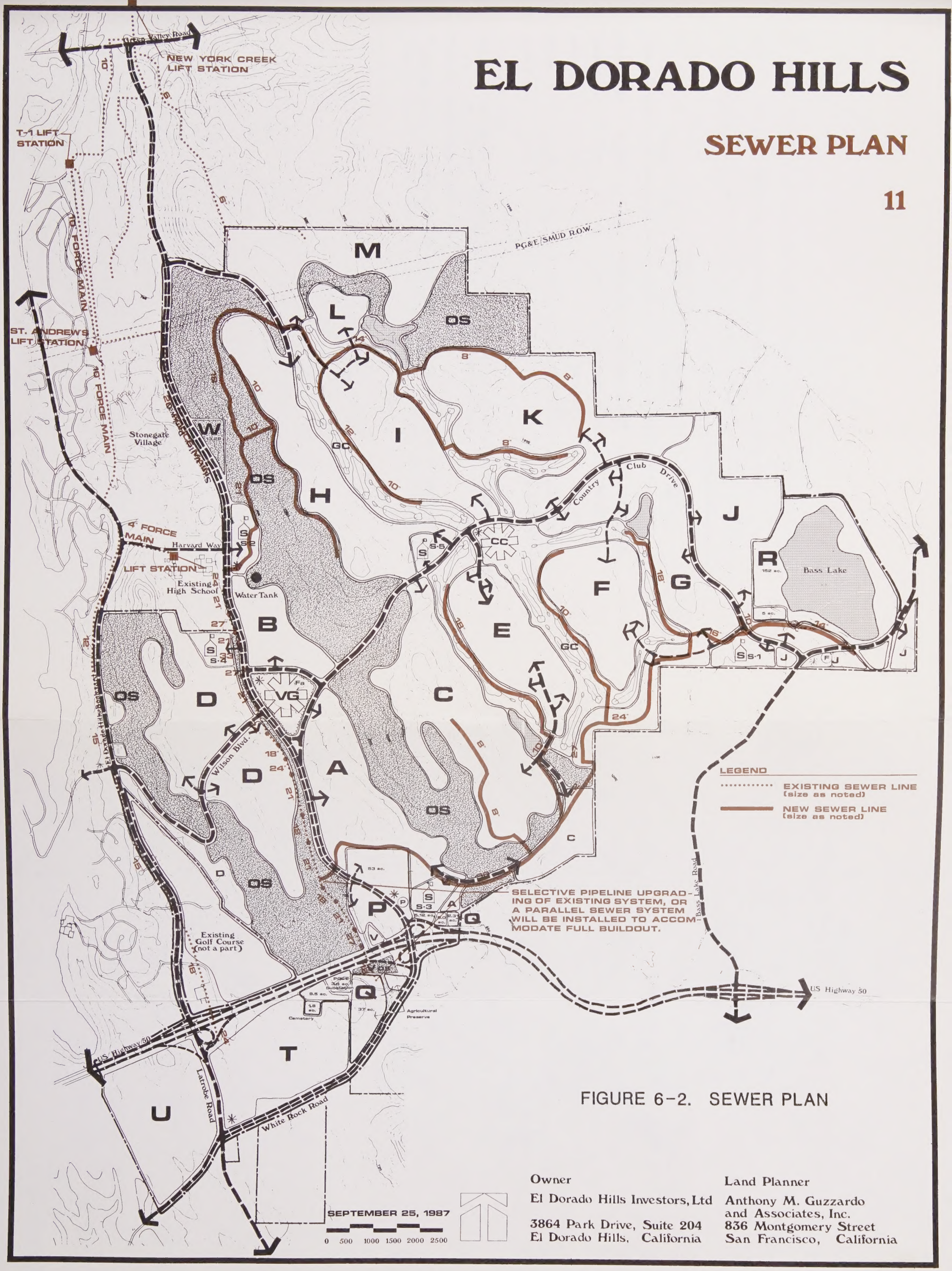


FIGURE 6-2. SEWER PLAN

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

EID Should Expand Treatment Capacities As Demand Warrants. Prior to plant expansion, EID will need to obtain necessary governmental permits. Environmental review of the planned expansion will be required by these agencies. It is possible that the project would have to delay various phases to ensure that adequate treatment capacity is available.

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

The goals and policies of the EDH-SF Area Plan which relate to public services/wastewater are included in Appendix I.

Solid Waste

Setting

The El Dorado Hills Community Service District (CSD) is responsible for contracting with solid waste collection and disposal services within the district. The El Dorado Disposal Service (EDS) is the franchise which currently provides service in the CSD and in areas outside the CSD. Solid waste collection and disposal is funded by user fees. The EDS provides service for about 12,000 residential and commercial customers. Collection service is provided from the main EDS office located in Placerville. EDS is staffed by 29 employees and owns and operates 16 collection vehicles (Scariot pers. comm.).

Solid waste is transported to the Union Mine Landfill located on Union Mine Road 8-9 miles south of Placerville. Approximately 45,600 tons of solid waste is generated per year within EDS's service area and transported to the landfill (Duncan pers. comm.). The landfill is a Class 2 facility accepting mainly solid and biological waste. The landfill operator and the El Dorado County Environmental Health Department have decided that hazardous waste will not be accepted (Sanford pers. comm).

The landfill has a total capacity of about 3.4 million cubic yards (about 1.4 million tons) and a life expectancy of 20-25 years. Operators of the landfill currently use about 11 percent (30 acres) of the total 270-acre site.

The county is discussing plans for a transfer station in the vicinity of El Dorado Hills to consolidate collection truck loads into larger trucks for transport to the landfill (Sanford pers. comm.). The state has required installation of a groundwater monitoring system and a hazardous waste containment system. The cost of the monitoring and containment systems is about $1 million (Sanford pers. comm.).

Table 6-3. Solid Waste Generation

Land Use	Area	Dwelling Units	Persons/ Dwelling Unit	Generation Rate	Tons/ Year
Residential		7,346	2.62-3.34[b]	3.4 lb/person/day[c]	11,942-15,224
Commercial	1,565,000[a]			1 lb/square foot/day[d]	2,856[e]
TOTAL					14,798-18,080

[a] Based on total commercial square footage estimated in Chapter 5, "Population, Housing, and Employment".

[b] Based on a countywide average and 1980 U. S. Census, respectively.

[c] Source: Sanford (pers. comm.).

[d] Source: Jones & Stokes Associates, et al 1986. Tons per year is determined by multiplying tons per day by 365.

[e] Tons per year is determined by multiplying tons per day by 365 days per year.

Impacts

Solid waste generation for the Plan Area at buildout would be an estimated 14,800-18,100 tons per year (Table 6-3). This represents approximately 32-40 percent of the landfill's total existing 45,600 ton-per-year intake (based on an estimate of 125 tons per day) (Duncan pers. comm.).

This increase in solid waste generation is considered significant, but could be reduced to a less-than-significant level by normal expansion of the landfill facilities.

The Plan Area would increase the EDS residential customers by 7,346 households for an increase of about 61 percent above the existing customer population. This increased service area population (either 19,247 or 24,536) would increase the demand for solid waste collection services. The existing service provider would have to incrementally increase staff and purchase equipment over the life of the project. This impact is considered less than significant, because solid waste collection services are financed by user fees, and because adequate landfill capacity exists.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. None.

Mitigation Measures Recommended by the EIR Consultant. None.

Mitigation Measures Required by County Policy. The goals and policies of the EDH-SF Area Plan which relate to solid waste are included in Appendix I.

Law Enforcement

Setting

Law enforcement services for the El Dorado Hills Specific Plan Area would be provided by the El Dorado County Sheriff's Department (Sheriff's Department), headquartered in Placerville. The service area consists of the 1,500-square-mile west slope area located west of Strawberry. The service area population is approximately 85,000.

The Sheriff's Department currently employs one sheriff, one undersheriff, one captain, two lieutenants, eight sergeants, forty deputies, nine detectives, five civil workers, and six courthouse workers. Existing equipment consists of 15 patrol

vehicles. This level of staffing results in 0.73 officer per 1,000 population, which is less than the 1.5 officers per 1,000 population the Sheriff's Department considers to be the ideal level of staffing (McDonald pers. comm.). The staffing standard of 1.5 officers per 1,000 population is the official standard of the El Dorado County Sheriff's Department. Courthouse workers and civil workers are not considered officers for the purpose of these staffing goals. Using this standard, the county would have to hire 62 officers under existing conditions to provide adequate law enforcement service.

The Sheriff's Department responded to 18,000 service calls in the west slope area, 25 percent of which were concentrated in the existing El Dorado Hills and Cameron Park areas. The types of calls responded to are not available. Emergency response time from the Placerville station to the Plan Area is about 15 minutes. Response times for patrols in the vicinity of the Plan Area is about 5 minutes.

Revenue for the Sheriff's Department comes primarily from the county general fund. Major costs include expenditures for additional officers and patrol vehicles. The average annual cost per officer is about $35,000, not including administration and maintenance costs. The average annual cost per patrol vehicle is about $18,000.

Impacts

Implementation of the Specific Plan would increase the demand for law enforcement services in western El Dorado County. Development would increase the existing service area population by at least 19,247-24,536 residents. Based on these population estimates, development of the Plan Area would require expenditures for an additional 29-37 law enforcement personnel (at 1.5 officers per 1,000 population) and 15-19 patrol vehicles (assuming each addition of two officers requires one vehicle).

This impact of increased demand for law enforcement is considered significant and could be mitigated to the less-than-significant level by providing an adequate funding mechanism for personnel expansion and capital improvements.

The Specific Plan proposes to reserve space for a Sheriff's substation at the Village Green/Community Center to reduce response times and provide a permanent law enforcement presence in the Plan Area. The Sheriff's Department does not support the idea of a substation in the area, because of potential administrative problems. Without this substation or some other form of permanent law enforcement presence in the Plan Area, the level of law enforcement would remain typical of service currently provided in the area. In general, rural counties are not capable of providing the level of service that is expected of police departments in incorporated urban areas. Response times for

sheriff's departments are normally longer than for city police departments, due to larger county service areas and limited numbers of sheriff's patrols.

Developing the Plan Area would increase service calls to the area. The most prevalent service calls associated with residential development would be traffic-related, medical/welfare, and theft or burglary calls. The Sheriff's Department may also receive a substantial number of calls as a result of commercial development in the Plan Area.

Mitigation Measures

Mitigation Measures Incorporated by Project Design.

The following mitigation measure is a Plan Policy of the Specific Plan.

Public Facilities and Services

3. Parks

f. Parks shall be designed to allow surveillance by adjoining residents, security services, and the Sheriff's Department.

Mitigation Measures Recommended by the EIR Consultant

Provide Adequate Funding Mechanisms For Department Personnel and Capital Improvements. The county should increase funding for Sheriff personnel, patrol vehicles, and support equipment.

Mitigation Measures Required by County Policy. The goals and policies of the EDH-SF Area Plan which relate to law enforcement are included in Appendix I.

Fire Protection

Setting

The El Dorado Hills Fire Department (Fire Department) would provide fire protection for the Plan Area. The Fire Department was formed in 1963 under the jurisdiction of the El Dorado Hills County Water District. The Fire Department operates throughout a 25,000-acre District, and provides service for a population of about 7,000. The Fire Department provides structural fire protection for the developed portions of the El Dorado Hills area, while the California Department of Forestry (CDF) is responsible for grassland fire suppression in the undeveloped areas (California Eastern Investment Corporation 1985).

The Fire Department maintains two fire stations which could respond to fires or other emergency situations in the Plan Area:

- Station 1, located at Lassen Lane and El Dorado Hills Boulevard in Park Village; and

- Station 2, located on Francisco Boulevard north of Green Valley Road in Marina Village.

Station 1 is the main firehouse with a full-time staff of 12 consisting of one Fire Chief, one Battalion Chief, one Secretary, three Captains, three Engineers, and three Firefighters. Station 1 houses seven emergency vehicles including two fire suppression engines, one squad vehicle, one water tender, two staff vehicles, and one utility vehicle. Station 2 consists of 21 volunteer firefighters with one fire suppression engine, one quick attack fire suppression vehicle, and one squad vehicle. Emergency response time to the Plan Area for both stations varies from 3 to 15 minutes (Cima pers. comm.).

The Department provides a number of services in addition to fire protection. These services include:

- building maintenance inspection;
- public education for fire prevention;
- emergency medical services;
- hazardous materials response;
- weed abatement;
- cardiopulmonary resuscitation instruction; and
- review of development plans.

A breakdown of the number and type of service calls to the Plan Area is not available; however, in 1986 over 46 percent of the Department service calls were for medical emergencies (El Dorado Hills Fire Department 1987).

The Fire Department currently provides 3.0 firefighting personnel per 1,000 population, assuming that volunteer firefighters are counted as half of a full-time firefighter. The ratio is 1.7 firefighters per 1,000 population if volunteer employees are not considered. This existing level of staffing is better than the standard of 1.5 firefighters per 1,000 population the Department considers adequate for providing fire protection in the service area (Cima pers. comm.).

Short-term plans for expansion include adding a full-time Fire Prevention Officer by 1988/89 and upgrading fire fighting vehicles. Longer term improvements involve adding a Training Officer at Station 1, upgrading firefighting vehicles, adding an additional staff vehicle, and providing six full-time firefighting personnel at Station 2. Finally, 1997 improvements include additional personnel at Station 1 including a mechanic and a Fire Prevention Inspector, a ladder truck, and provision of an

additional fire station located south of Bass Lake. For a summary of 10-year planned improvements see Table 6-4.

Capital improvements are funded from development fees. Development fees are currently $285.00 per residential dwelling unit, $0.08 per sf of sprinklered commercial building space, and $0.16 per sf of non-sprinklered commercial building space. The development fee is evaluated annually to ensure the fee schedule will be adequate to finance projected improvements (El Dorado Hills Fire Department 1987).

Operating costs are funded from the county general fund and by a portion of the county tax revenue called augmentation funds. Augmentation funds are a portion of the county tax revenue distributed to special districts at the discretion of the Board of Supervisors. The Department is concerned that these sources of funding may not increase at the same rate operating costs are rising. The basis for this concern is twofold. First, the county believes that appropriation limits mandated by Proposition 4 (1980) will restrict the ability of local governments to provide adequate public services. These appropriation limits place a ceiling on local and state government budgets. Once the ceiling is reached, budgets are adjusted by the rate of the cost of living factor and population increases unless an additional increase in the appropriation limits is obtained by a two-thirds vote of the electors. Problems associated with financing public services occur when these adjustments for cost of living and population increases rise slower than the rate of operation cost increases. The Department anticipates that this is the case and that its budget will reach the appropriation limits soon (El Dorado Hills Fire Department 1987).

Second, historical trends for augmentation funds indicate that the percentage of these funds that are distributed to the Fire Department have been decreasing over the past 8 years. Future distribution of these funds are expected to follow this trend (El Dorado Hills Fire Department 1987).

Impacts

Implementation of the Specific Plan would increase the demand for fire protection services in the Plan Area, creating 7,346 dwelling units at buildout, which would produce a population of between 19,247 and 24,536. Based on these population figures, the Specific Plan would require expenditures for between 29 and 37 additional fire fighting personnel at buildout (10-20 years). This impact is considered significant, but could be mitigated to the less-than-significant level by implementing the Department's Ten Year Plan 1987-1997. This plan envisions an increase of 26 paid fire fighting personnel between 1987 and 1997 with volunteer fire fighters providing additional manpower (Table 6-4). Even considering the worst case, that 37 fire

Table 6-4. El Dorado Hills Fire Department Station Apparatus and Manning Summary

	1987 (Present)	1988/89	1991/92	1996/97
Station One - Park Village				
	Administrative 1 - Chief 1 - Battalion Chief 1 - Secretary	Administrative 1 - Chief 1 - Battalion Chief 1 - Secretary 1 - Fire Prevention Officer	Administrative 1 - Chief 1 - Assistant Chief 1 - Secretary 1 - Fire Marshall 1 - Training Officer	Administrative 1 - Chief 1 - Assistant Chief 2 - Secretary 1 - B/C Fire Marshall 1 - B/C Training Officer
	Shift Personnel 3 - Captain 3 - Engineer 3 - Firefighter	Shift Personnel 3 - Captain 3 - Engineer 3 - Firefighter	Shift Personnel 3 - Captain 3 - Engineer 3 - Firefighter	Shift Personnel 6 - Captain 6 - Engineer 6 - Firefighter 1 - Engineer/Mechanic (40 hr week) 1 - Engineer/Fire Inspector (40 hr week)
	Apparatus 2 - Engine 1 - Squad 1 - Water Tender 2 - Staff Vehicles 1 - Utility	Apparatus 2 - Engine 1 - Squad 1 - Water Tender 3 - Staff Vehicles	Apparatus 2 - Engine 1 - Squad 1 - Water Tender 3 - Staff Vehicles 1 - Utility	Apparatus 1 - Engine 1 - Squad 1 - Truck 3 - Staff Vehicles 1 - Utility
Station Two - Marina Village				
	Personnel Volunteer	Personnel Volunteer	Shift Personnel 3 - Captain 3 - Engineer	Shift Personnel 3 - Captain 3 - Engineer
	Apparatus 1 - Engine 1 - Quick Attack 1 - Squad	Apparatus 1 - Engine 1 - Quick Attack 1 - Squad	Apparatus 1 - Engine 1 - Quick Attack 1 - Squad	Apparatus 1 - Engine 1 - Reserve Engine 1 - Squad
Station Three - Bass Lake				
	--	--	--	Shift Personnel 3 - Captain 3 - Engineer
				Apparatus 1 - Engine 1 - Water Tender
Total Paid Personnel	12	13	20	38
Volunteer Personnel	Yes	Yes	Yes	Yes

Source: El Dorado Hills Fire Department 1987.

fighting personnel would be required at buildout, the Fire Department's Ten Year Plan appears to be adequate.

Construction of the Bass Lake fire station, as part of the Ten Year Plan, would reduce response times throughout the Plan Area to about 3-5 minutes (El Dorado Hills Fire Department 1987). The station would also provide backup for Stations 1 and 2.

Buildout of the Plan Area would provide about $1.8 million in residential development fees and about $125,000 in commercial development fees (fees for commercial development assume sprinklered units are built and that square footage is about 1,565,000). These fees would be used for capital improvements. Based on the Fire Department's 10-year projection for apparatus and facilities, costs for capital improvements (including the new Bass Lake station) would be about $1.2 million in 1987 dollars over the next 10 years. Thus, the current fee schedule appears to be sufficient to cover major capital improvement costs. This impact is considered less than significant.

Figures for operating costs are not available, so the impact of implementing the proposed Specific Plan cannot be determined; however, given the need for between 29 and 37 fire fighting personnel and the potential county funding problems discussed in the "Setting" section, covering operating costs could become a future impact issue associated with providing service to the Plan Area.

The Plan Area proponents would be required to provide water service which meets all Insurance Service Office (ISO) requirements for system fire flows. All Uniform Fire Code provisions would be required for access road construction. The Department has indicated that dirt roads would be adequate for access in the open space areas (Cima pers. comm.).

Development of the Plan Area would increase the threat of grassland fire adjacent to the urbanizing areas in the vicinity. The added population would increase use of surrounding grassland areas. This type of increased use normally results in increased fire starts. Due to appreciable slopes of the foothills in the plan area vicinity, the potential for rapid spread of wildfire to adjacent foothill wildlands is substantial. This increased potential for wildfire is considered a significant impact which could be reduced to the less-than-significant level by the fire hazard control measures contained in the Specific Plan and by implementing the planned 10-year improvements.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. The following mitigation measures are Plan Policies of the Specific Plan.

Site Development and Grading

h. Landscaping in areas adjacent to natural open space shall be fire-resistant.

The Specific Plan also includes the following provisions under Fire Hazard Control in the Open Space Element.

Mitigation Measures Recommended by the EIR Consultant

Implement the El Dorado Hills Fire Department's Ten Year Plan. The Department should implement their Ten Year Plan by assessing the current development fees and reevaluating fees on an annual basis.

Mitigation Measures Required by County Policy. The goals and policies of the EDH-SF Area Plan which relate to fire protection are included in Appendix I.

Schools

Setting

Elementary Schools. The Plan Area is served by two school districts. The Rescue Union School District (RUSD), grades K-8, serves the northern and eastern portions of the Plan Area, which would eventually become Villages G, J, L, M, and part of Village F. Approximately 2,000 Plan Area dwelling units would be located in the RUSD. The remaining portions of the Plan Area, including about 5,400 dwelling units, would be served by the Buckeye Union School District (BUSD), grades K-6.

The RUSD operates four schools throughout the district including three elementary schools, Green Valley School (grades K-3), Rescue School (grades 4-6), Jackson School (grades K-6), and Marina Village School (grades 7 and 8).

The RUSD current enrollment of 1,460 students exceeds the capacity limits of the district master plan. Thus, the RUSD is considered impacted. The RUSD does have three planned school sites which could accommodate some growth. These include a 10-acre site on Greenstone Road in the eastern portion of the district, a 9.5-acre site in Marina Village South located in the Northwest El Dorado Hills Specific Plan Area, and a 3-acre expansion at Jackson School. The RUSD expects these planned facilities, along with facility improvements of existing schools, to accommodate a substantial portion of new growth (Soldano pers. comm.).

The BUSD operates three schools for grades K-8. None of these schools is located in the Plan Area. As of February 1987, the district student enrollment was 1,843. The district-wide

capacity standard of the BUSD is 540 students per school. Thus, the BUSD is over capacity by at least 200 students. The BUSD has identified no planned school sites to alleviate this enrollment problem.

High Schools. The El Dorado Hills area is also served by the El Dorado High School District (EDHSD), which operates three senior high schools: El Dorado High School, Ponderosa High School, and Oakridge High School. Oakridge High School is located in the vicinity of the Plan Area at its western boundary on Harvard Way. This campus covers a total of 50 acres and currently provides classroom capacity for approximately 1,200 students. Capacity could be expanded to about 1,500 students using portable classrooms. Enrollment data are not available for Oakridge High School, but the EDHSD has indicated that district-wide facilities are at or near capacity. Students generated by Plan Area development would not be accommodated at Oakridge High School (Hemmington pers. comm.).

The EDHSD has planned for additional growth in the district by establishing a school master planning program. Generally, the primary goal of the master plan is to increase capacity of existing schools in the Placerville area, and to add new school facilities in the western portion of the district near the Plan Area. The EDHSD has acquired a site in the El Dorado Township which may serve the south-central portion of the district, but a site further west is also required.

Facility Financing. Since the passage of Proposition 13, the main source of funding for school facilities has been the State School Building Lease Purchase Program, funded primarily from voter-approved state bonds, but the demand has greatly outstripped the supply. The State Allocation Board, which administers the state program, estimates that it has over $1.5 billion of unfunded applications. The California Department of Finance estimates an unfunded need of $4 billion for new construction and rehabilitation over the next 5 years.

School Financing Options. Local options of financing school facilities include developer fees, special taxes under the Mello-Roos Community Facilities District Act, redevelopment tax increment financing, and Assembly Bill 2926.

- Developer Fees. Cities and counties have relied on three major types of developer fees to finance school construction.

  - SB 201 Impact Fees. Since the passage of SB 201 in 1977, cities and counties can charge fees or require developers to dedicate land if a school district finds that its local schools are already overcrowded. School districts can only use these fees to pay for interim facilities -- usually relocatable classrooms. The Legislature created this device to help districts

house students until permanent facilities could be constructed with state funds.

- Police Power Fees. Cities and counties also imposed fees on developers under their general police powers or under the Subdivision Map Act. These fees were used for permanent or interim facilities. Assembly Bill 2926 eliminated the use of this fee.

- CEQA Mitigation Fees. Cities and counties used to levy developer fees for school construction to mitigate a project's negative effects on the environment, such as school overcrowding. Assembly Bill 2926 eliminated the use of mitigation fees under CEQA.

o Special Taxes. School districts can levy special taxes with two-thirds voter approval. Schools have direct taxing power, unlike developer fees, which must be charged by cities and counties and then rebated to schools.

- Mello-Roos Special Taxes. Under the Mello-Roos Act, local agencies, including school districts, can impose special taxes with two-thirds voter approval to finance bonds for a variety of capital improvements, including schools. When an area is legally uninhabited (i.e., less than 12 registered voters), the landowners vote.

o General Obligation Bonds. Proposition 46, approved by the voters in the June 1986 primary election, restored the authority of local governments, including school districts, to raise property taxes to pay off general obligation bonds. Generally, school district officials are not optimistic about passing new bonds with a two-thirds vote.

o Redevelopment Tax Increment Financing. Redevelopment plans must address the extent to which services provided by taxing authorities within the boundaries of a redevelopment project will be affected by the redevelopment. This financing option is only available in redevelopment areas.

o Assembly Bill 2926 (Stirling). Assembly Bill 2926 establishes a new state and local partnership to finance school construction. AB 2926 authorizes school districts to levy developer fees directly on new construction, but limits these fees to $1.50 a square foot for residential construction and $0.25 a square foot for commercial and industrial construction. These dollar limits can increase with inflation. Cities and counties cannot issue building permits until the applicable

school district certifies that the developer has complied with its fee requirements.

Assembly Bill 2926 specifies that the state's share of construction costs is the difference between the total cost of the project and the amount of local participation. The bill requires the actual local match to equal the amount that could have been raised by charging the maximum developer fees during the period between the date of the approved application for state school construction funds and the date of issuing a notice of project completion. The local match does not have to equal a fixed percent of total project costs.

There are several issues which need to be resolved concerning Assembly Bill 2926, including:

- how should overlapping school districts share the developer fee;
- how long should fees be levied;
- should collection of the fees be limited to the amount required to meet the local match, or to the actual cost of constructing the facilities; and
- are the fees subject to the Gann limit.

Impacts

Student Generation. Development of the Plan Area would result in a total combined student generation of 5,179 students for the RUSD, BUSD, and EDHSD (see Table 6-5). The RUSD would generate a total elementary and junior high enrollment of about 800 students. According to the RUSD, completion of the Marina Village South School and other improvements throughout the RUSD would increase elementary school capacity, thus enabling Jackson Elementary School to provide adequate service for projected Plan Area elementary students. A 7-8 grade junior high school, located near Bass Lake, would be required by the RUSD as indicated on the Specific Plan map. This school would accommodate intermediate-level students generated by the Plan Area dwelling units which are in the RUSD (Wade and Associates 1987).

Student generation in the BUSD would total about 2,530 students. According to the BUSD, this would require four schools located in the Plan Area. These schools are designated on the Specific Plan map as three elementary school sites of 8-10 acres each, and an intermediate school (grades 7-8) site of 15-18 acres (Wade and Associates 1987).

The Specific Plan would generate a total high school enrollment of about 1,850 students and would require a new 40-acre

Table 6-5. Plan Area Student Generation

District	Grade Level	Dwelling Units	Generation Rate (Students per Dwelling Unit)	Total Yield
Rescue Union School District	K-8	2,000	0.401[a]	802
Buckeye Union School District	K-6	5,400	0.468[b]	2,527
El Dorado High School District	9-12	7,400	0.25[c]	1,850
TOTAL				5,179

[a] Source: Soldano (pers. comm.).

[b] Source: Graf (pers. comm.).

[c] Source: Hemington (pers. comm.). Rate is based on El Dorado Hills student per household ratio.

high school to be located in the EDH-SF Plan Area. A potential location of this type of school facility has been proposed for an area south of U. S. Highway 50 and east of Latrobe Road.

Facility Costs and Funding. Implementation of the Specific Plan would require five elementary and intermediate schools to be located in the Plan Area. The three elementary schools are projected to cost $3.5 million each, exclusive of land costs, and the two junior high schools are projected to cost about $5.2 million each, exclusive of land costs. The total school construction costs for these schools is projected to be $20.9 million.

The EDHSD would require a new 40-acre high school in the vicinity of the Plan Area at a projected cost of between $20 million to $25 million.

The Specific Plan proposes to reserve sites for the schools. Land acquisition and construction of the new schools would then be financed either by the Stirling fee, which has been implemented by each district, SB201 Impact Fees, or a Mello-Roos district.

Stirling development fees from the residential portion of the Plan Area could generate approximately $22,038,000 (assuming an average residence floor area of 2,000 square feet). If the Plan Area commercial space is found to create a need for schools, as much as $700,000 in additional fees could be generated.

A total of approximately $23 million could ultimately be generated by new development in the Plan Area. The estimated total cost of the five elementary and intermediate schools and the high school is approximately $41-$46 million. If the development fees are used as a match for the state school construction program, they would be more than the 25 percent to 50 percent match requirement under the current legislation (Wade and Associates 1987).

Development of the Plan Area would generate a substantial amount of money toward new school construction; however, the existing schools are at capacity and new schools could not be financed for years. The substantial increase in students is considered a significant impact. To reduce to a less-than-significant level, the developer should work with the school districts to determine how the schools could be constructed when they are needed.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. The following mitigation measures are Plan Policies of the Specific Plan.

Public Facilities and Services

2. Schools

a. Schools shall be located within residential villages, convenient to students who reside beyond those villages and shall be located to facilitate access.

b. Schools shall be linked to the pedestrian trails and path system.

c. School sites should be located adjacent to public open space and public park sites wherever possible and should provide for joint use of facilities.

d. School sites, as shown on the Specific Plan map, will be reserved for public acquisition and ownership in conjunction with the filing of tentative subdivision maps for each village. (NEW)

e. School district boundaries should be consistent with village boundaries to prevent a village being divided between school districts. (NEW)

3. Parks

b. Where school sites are contiguous to parks, play apparatus and other recreation features and amenities shall be coordinated to avoid duplication.

Mitigation Measures Recommended by the EIR Consultant

Select Alternative School Funding Mechanisms and Identify Timing. The developer should work with the school districts to determine how the schools needed immediately could be financed. Options include Mello-Roos special taxes, general obligation bonds, or outright construction with reimbursement.

Mitigation Measures Required by County Policy. The goals and policies of EDH-SF Area Plan which relate to schools are included in Appendix I.

Parks and Recreation

Setting

Park and recreation facilities in the Plan Area would be provided by the El Dorado Hills CSD. The CSD boundary does not completely encompass the Plan Area, but the Plan Area is located within the CSD area of influence.

The CSD provides a recreation program and maintains a total of 13 park and recreation facilities throughout its service area. Most of these facilities are small neighborhood parks or recreational facilities operated in conjunction with schools. Recreation programs include league softball, exercise classes, karate, tennis, and gymnastics. The CSD Recreational Facilities Master Plan (1981) indicates that the CSD is deficient in athletic playfield acreage (Arlan Nickel Associates 1981).

Other recreation opportunities in the vicinity of the Plan Area include Folsom State Park, featuring Folsom Lake as the major recreation center. Folsom Lake is located northwest of the Plan Area and provides activities such as boating, picnicking, fishing, and camping. The El Dorado Hills Golf Course, located adjacent to the Plan Area on El Dorado Hills Boulevard, is a public 18-hole, par 61 course with a clubhouse and driving range.

The CSD does not presently operate any parks or other recreation facilities in the Plan Area, but the CSD Recreational Facilities Master Plan (1981) designates two future park sites in the vicinity of the Plan Area:

- Oak Ridge Community Park, planned as a 40-acre community park located west of the Plan Area adjacent to the Oak Ridge High School; and

- DeBocco Park, planned as a 3-acre neighborhood park located east of the Plan Area in the vicinity of Bass Lake.

These planned park sites were originally designated in the Facilities Master Plan to serve population centers surrounding the Plan Area. The Recreational Facilities Master Plan park designations do not take into account park and recreation demand that would be created by development of the Plan Area.

The park and recreation facilities standards applicable for the Plan Area consist of 2 acres per 1,000 population for neighborhood parks/playgrounds, and 2 acres per 1,000 population for community and district parks. Neighborhood parks should be 2-5 acres in size and include swings, tot lots, turfed and paved play areas, benches, walkways, and landscaping. Community and district parks should be 15-25 acres in size and provide space for athletic fields (1.5 acres per 1,000 population), tennis courts, horseshoes, shuffleboard, lawn area, swimming pools (1 per 25,000 population), picnic areas, day camp centers, band shells, and parking lots. In addition, the CSD standards include one 18-hole golf course per 50,000 population, a 20-acre lake per 25,000 population, and an indoor recreation and social center per 10,000 population (Arlan Nickel Associates 1981).

Funding for the CSD's operation and maintenance costs is primarily provided by county assessed tax revenues. According

to the Recreational Facilities Master Plan (1981), the CSD must pursue other funding sources, in addition to its current tax, in order to meet its park and recreation needs. Some of these funding sources include federal, state, and local grants and loans; private foundation and institution grants and loans; other private contributions; and legislative funding alternatives such as tax increases, bond measures, and institution of assessment districts (Arlan Nickel Associates 1981).

The El Dorado County Major Land Division Ordinance section 9351 empowers the Board of Supervisors to require dedication of park and recreation land, or fees in lieu of dedication, as a condition of approval of a final subdivision map. The ordinance places certain restrictions on this action and provides a dedication and fee formula for determining the amount of land to be dedicated or fees to be paid. The ordinance also provides for credit of private open space designated for a subdivision subject to the following standards:

- open space which is required by zoning and building regulations shall not be included in the computation of open space to be credited;
- private ownership and maintenance of open space is adequately provided for by written agreement;
- private open space is restricted for park and recreation purposes by recorded covenants;
- private open space is reasonably adaptable for use for park and recreational purposes, taking into consideration factors such as size, shape, topography, geology, and location of private open space land; and
- facilities proposed for the open space is in substantial accord with the county recreation element.

Impacts

Implementation of the Specific Plan would result in an increased demand for neighborhood parks and playgrounds and community and district park acreage.

According to the CSD standards, this park land acreage should consist of 8-25 individual neighborhood parks and playgrounds and 1-3 community and district parks, depending on the acreage standard for each park type and the population estimates used to determine required park acreage (Table 6-6).

The Specific Plan offers a variety of private and public park and recreation facilities. These amenities are briefly described in Chapter 2, "Project Description," and described fully in the Specific Plan (see Tables 2-1 and 2-1A). The Plan

Table 6-6. Park Standards and Planned Acreage

	CSD Park Goals		Park Land Demand Using CSD Goals			Park Land Supply Using CSD Goals[a]			Difference	
	Size (Acres)	Goal (Acres/1,000 Persons)	Population[d]	Acres	Number	Population	Acres	Number	Acres	Number
Neighborhood parks and playgrounds[b]	2-5	2.0	19,247	38.5	8-19	19,247	36.8	7	-1.7	1-12
			24,536	49.1	10-25	24,536	36.8	7	-12.3	3-18
Community and district parks[c]	15-25	2.0	19,247	38.5	1-3	19,247	0	0	-38.5	1-3
			24,536	49.1	2-3	24,536	0	0	-49.1	2-3
TOTALS		4.0	19,247	77.0	9-22	19,247	36.8	7	-40.2	2-15
			24,536	98.2	12-28	24,536	36.8	7	-61.4	5-21

[a] Park land includes 10.8 acres at the Village Green/Community Center. No credits given for open space, active recreation at school sites, golf course and club facilities, private project facilities, or joint use of school site athletic fields.

[b] Facilities: swings, slide, tot lot and play equipment, turf area, paved area for court games and wheeled toys, benches, walks, and landscaping.

[c] Facilities: multi-use athletic fields at a ratio of 1.5 acres per 1,000 population, tennis courts, shuffleboard, horseshoes, lawn areas, outdoor swimming pools at a ratio of 1 per 25,000 population, band shell, picnic areas, day camp center, and a parking lot.

[d] Population estimates based on 7,346 dwelling units with a persons per household figure of 2.62 (19,247) or 3.34 (24,536).

Area would include approximately 1,020 acres of open space, 370 acres of golf courses, and 26 acres of park land, and 10.8 acres of park land at the Village Green/Community Center, or about 35 percent of the total 4,086-acre Plan Area. The Specific Plan also proposes the joint use of five proposed school sites for active recreation and turfed playfields.

The adequacy of the proposed facilities is analyzed based on the following three criteria:

- o plan consistency with the CSD standards and policies;
- o financing of park and recreation facilities; and
- o ownership and maintenance of open space and park and recreation facilities.

Consistency. The Plan Area facilities would provide far more gross acreage for park and recreation than is required by current CSD standards. The Specific Plan includes a variety of park and recreation amenities which are intended to provide adequate and aesthetically pleasing natural and recreational open spaces. The Specific Plan is, however, inconsistent with several CSD standards. First, the Specific Plan proposes 26 acres of pocket parks (neighborhood parks), although the CSD standard indicates that 38.5-49.1 acres of park and recreation land would be required. Second, the Specific Plan does not provide the required acreage for a community/district park and may not provide adequate athletic play field acreage depending on how much field acreage is provided by school facilities.

The increased demand for recreational facilities and possible conflict with CSD standards is considered a significant impact. To reduce to a less-than-significant level, the developer should coordinate the required park acreage and facilities with the CSD. Should park land dedication or fees in lieu of dedication be required by the CSD, the dedication or fees should reflect CSD standards and priorities.

The substantial private open space acreage that is planned for the Plan Area may be eligible for private open space park land credits, depending on whether the land meets the credit requirements of Section 9351 of the El Dorado County Major Land Division Ordinance (see "Setting" earlier). The amount and type of credits, if any, that are obtained due to Plan Area private facilities could change the park land acreage requirements.

The Specific Plan includes a system of bicycle and pedestrian paths connecting village developments, schools, and open space areas. This action is consistent with the CSD Recreational Facilities Master Plan recommendations for trails and pathways within the CSD.

The CSD's planned 40-acre Oak Ridge Park, to be located adjacent to the Oak Ridge High School, could possibly provide regional park and athletic field space for plan area residents. The CSD has indicated, however, that this regional park should not be considered as mitigation for the Plan Area unless funding mechanisms are provided by Plan Area developers for development of the park (Gambles pers. comm.).

Park Land Financing. The Specific Plan recreation proposals could require dedication of an undisclosed amount of park land or payment of fees in lieu of dedication. The land or fees that could be required is determined, in part, by a combination of density and fee formulas, park land credits which may be awarded, and CSD park land standards and priority needs. The fees that are acquired are used to purchase park and recreation sites and to finance capital improvements.

The five pocket parks totalling 16 acres are envisioned as minimal maintenance turfed areas that provide for passive recreation, picnics, children's play areas, and similar activities. The basic improvements, as outlined in the Specific Plan, would include minimal grading, turf, bollards, play equipment, and lighting in some parks. At an estimated development cost of $40,000 per acre, park land development would cost $640,000 exclusive of land acquisition. Funding for parks would be provided by a combination of development fees and private financing.

The impact of the Plan Area development on the CSD's ability to finance park and recreation facilities is not completely understood. Assuming that the CSD is currently unable to finance park land improvements, the Plan Area development could have a considerable fiscal impact on the CSD. A more definite determination cannot be made without the following information:

- CSD total current budget and costs of the CSD;
- amount of land (or fees) to be dedicated to the CSD;
- amount of park land density credits given for private open space; and
- other revenue sources of the CSD.

Ownership and Maintenance. The natural open space will be initially owned and managed by the master developer. Ultimately, ownership and management responsibilities of portions of the open space will be relinquished to another entity, such as the CSD, for public open space, and to a Master Homeowners Association for private open space.

Mitigation Measures

Mitigation Measures Incorporated by Project Design. The following mitigation measures are Plan Policies of the Specific Plan.

Circulation

2. Pedestrian Sidewalks, Paths and Trails

a. Sidewalks, paths and trails along major arterials should be separated from streets and parking areas to the maximum extent possible both for safety and the enjoyment of the user.

b. Paths and trails through residential open space should be located to minimize intrusion upon privacy of residents.

c. Where possible, paths and trails should follow natural drainage courses. In most instances, drainage easements will provide for trail construction and public access.

d. Sidewalks, paths and trails which are not adjacent to public streets should be clearly marked to facilitate use and discourage wandering beyond recorded easements.

e. Barriers and trail signage shall be designed and installed to prevent access by unauthorized motor vehicles.

f. Paths and trails within natural open space should be located to take advantage of scenic areas and vistas.

g. Construction of paths and trails within natural open space shall ensure minimum impact on terrain and vegetation and standards should also strive to minimize maintenance requirements.

h. Sidewalks within street rights-of-way shall meander irrespective of the alignment of the street pavement.

Natural Open Space Policies

The natural open space policies are to guide the preservation, management, and maintenance of these areas in their relation to adjacent land uses.

a. The boundaries of natural open space shall blend with boundaries of the villages in a manner to enhance the integration of open space and developed areas.

b. Open space shall be linked visually and physically to the extent practicable by prohibiting perimeter lot fencing adjacent to the open space. Perimeter fencing may be permitted for rural parcels as provided in the Design Guidelines and CC&Rs.

c. Increased run-off from adjacent development will require erosion control measures to be coordinated with landscape design of adjacent development areas. Emphasis shall be placed on methods which rely on natural drainage systems and minimize change to the existing condition of creek channels within open space areas.

d. An Open Space Management Plan shall be completed and approved as to form by the planning director and shall be an implementation mechanism of this Specific Plan in order to set forth procedures and responsibilities as to the ownership, preservation, and management of public and private natural open space areas. The Open Space Management Plan shall consider the dedication of open space easements to the County of El Dorado, over the public open space areas should dedication of fee ownership of these areas be made to any other entity. (NEW)

Public Facilities and Services

3. Neighborhood Parks

a. Park facilities shall be designed to meet the recreation needs of village residents, consistent with the availability of the recreational and open space areas.

b. Where school sites are contiguous to parks, play apparatus and other recreation facilities and amenities shall be coordinated to avoid duplication.

c. Native and drought-tolerant trees and shrubs shall be incorporated into the landscape design of parks where feasible.

d. Play equipment and other features shall be constructed to achieve harmony with the natural setting of the Specific Plan area.

e. Parks shall be designed so as to minimize maintenance requirements.

f. Parks shall be designed to allow surveillance by adjoining residents, security services and the Sheriff's Department.

g. Removal of existing trees shall be avoided wherever possible.

h. Public parks will be reserved for public ownership with the filing of tentative subdivision maps for each village. (NEW)

i. Public parks should be linked to bike and pedestrian paths, if feasible. (NEW)

j. Public parks should not be located on slopes in excess of 20 percent or adjacent to a golf course. (NEW)

Mitigation Measures Recommended by the EIR Consultant

Coordinate Park Land Acreage and Facilities with the CSD. The Specific Plan developers need to coordinate the location and facilities of future parks. Several options being considered are: entering into joint-use agreements with the school districts, having individual developers in the Plan Area provide private recreational facilities, and crediting the developers for open space and the golf courses.

Mitigation Measures Required by County Policy. The goals and policies of the EDH-SF Area Plan which relate to parks and recreation are included in Appendix I.

Electrical and Gas Service

Setting

Natural gas and electrical service would be provided for the Plan Area by PGandE. The nearest gas transmission line is located within El Dorado Hills Boulevard. Cost for extension of gas lines to the Plan Area would be approximately $12.42 per lineal foot. Trenching inspection costs would be approximately $7.50-$10.00 per lineal foot.

PGandE would also provide electrical service for the Plan Area from a 12-kilovolt overhead transmission line located in the joint SMUD/PGandE easement near the northern boundary of the Plan Area. Alternatively, PGandE could extend service lines from the 115-kilovolt overhead transmission line located adjacent to U. S. Highway 50, or from local transmission lines near El Dorado Hills Boulevard. Electrical transmission lines servicing the Plan Area would be installed underground. Current construction costs for extending underground electrical lines is $12.72 per lineal foot. Trenching inspection costs of $7.50-$10.00 per lineal foot is also charged.

Impacts

Buildout of the Plan Area would create a substantial demand for natural gas and electricity. An estimate for gas

consumption in the Plan Area is not available, but PGandE indicates that there would be sufficient capacity to serve all proposed uses in the Plan Area (Luna pers. comm.).

Peak electricity consumption for the Plan Area is estimated at about 72,000 kilowatts per year (see Table 6-7). This is a rough order of magnitude estimate, based on electricity generation factors for the Sacramento area (Sacramento City Planning Department 1987). According to PGandE, there is adequate electrical capacity and facilities available to provide service for the entire Plan Area (Lima pers. comm.).

Provision of gas and electricity service is considered a less-than-significant impact. The energy consumption for the Plan Area could be reduced, however, by implementing energy conservation measures mandated by Title 17 of the California Administration Code, and by designing Plan Area buildings to utilize passive solar radiation. Refer to Chapter 15, "Energy Conservation" for a discussion of energy conservation measures.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

Residential Policies

2. Site Development and Grading

i. Site design, street, and lot patterns shall follow solar orientation principles to the maximum extent practical and feasible in order to maximize energy conservation.

Commercial Land Use

1. General

g. Trees shall be planted and maintained throughout surfaced parking lots having more than 10 parking spaces to ensure that, within 15 years after planting, at least 40 percent of the parking area is shaded.

Mitigation Measures Suggested by the EIR Consultant. None.

Mitigation Measures Required by County Policy. The goals and policies of the EDH-SF Area Plan which relate to electrical and gas service are included in Appendix I.

Table 6-7. Peak Annual Electrical Demand

Land Use	Acres	Kilowatts[a] Per Acre Per Year	Estimated Peak Demand in Kilowatts
Residential			
Single-family	1,973	20	39,460
Multi-family	210	36	7,560
Commercial	276[b]	80	22,080
Schools	60	50	3,000
TOTAL			72,100

[a] Source: Sacramento City Planning Department 1987.

[b] Includes 16.2 acres for Village Green/Community Center.

Chapter 7
Transportation

This chapter is based on a report prepared by TJKM Transportation Consultants.

SETTING

Existing Roadway Network

There are only five major roadways within the El Dorado Hills study area boundaries used in the transportation study. A description of each of these facilities is included in the following paragraphs.

- U. S. Highway 50, in the El Dorado Hills area, is a grade-separated four-lane freeway. Access to the highway is provided via interchanges at El Dorado Hills Boulevard and Bass Lake Road. The highway provides service to Sacramento to the west and Placerville and Lake Tahoe to the east.

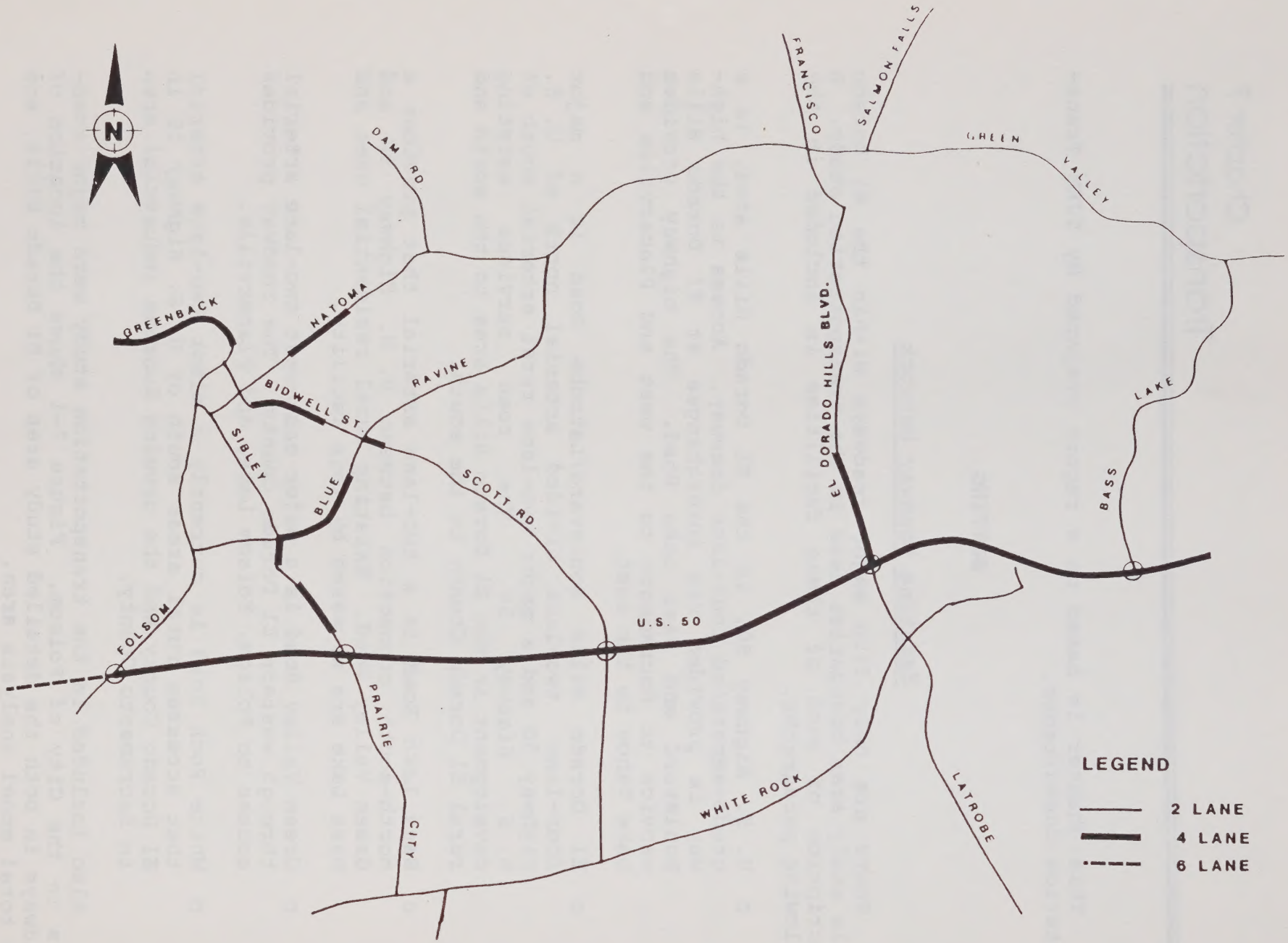
- El Dorado Hills Boulevard/Latrobe Road is a major four-lane/ two-lane divided arterial north of U. S. Highway 50 and a major two-lane rural arterial south of U. S. Highway 50. The road services existing development in the El Dorado Hills area to the north and rural El Dorado County to the south.

- Bass Lake Road is a two-lane arterial that provides a north-south connection between U. S. Highway 50 and Green Valley Road. Existing rural residential uses and Bass Lake are accessed by this facility.

- Green Valley Road is a major east-west two-lane arterial through western El Dorado County. The roadway provides access to Folsom, Folsom Lake, and Placerville.

- White Rock Road is currently a minor two-lane arterial that accesses rural areas south of U. S. Highway 50 in El Dorado County and the growing Sunrise industrial area in Sacramento County.

Also included in the transportation study were major roadways in the City of Folsom. Figure 7-1 shows the location of roadways in both the detailed study area of El Dorado Hills, and the total model analysis area.



EXISTING ROADWAY NETWORK

FIGURE 7-1

The proposed East Area Beltway (DKS and Associates n.d.), a grade-separated roadway that could connect Interstate 80 with U. S. Highway 50, State Highway 99, and Interstate 5 could pass through the west side of the model area through Folsom. This new facility would have very little impact on traffic volumes in El Dorado Hills but could provide an alternative to U. S. Highway 50 for traffic in Sacramento County.

Existing Traffic Volume

Daily Traffic

Existing daily traffic and p.m. peak hour traffic volumes on all of the major roadways in both the El Dorado Hills and Folsom areas are shown in Figure 7-2. The traffic volume data were obtained from Caltrans, 1985 Traffic Volumes on the California State Highway System, R. C. Fuller & Associates, Northwest El Dorado Hills Specific Plan EIR and TJKM field work.

Peak Hour Traffic Volumes

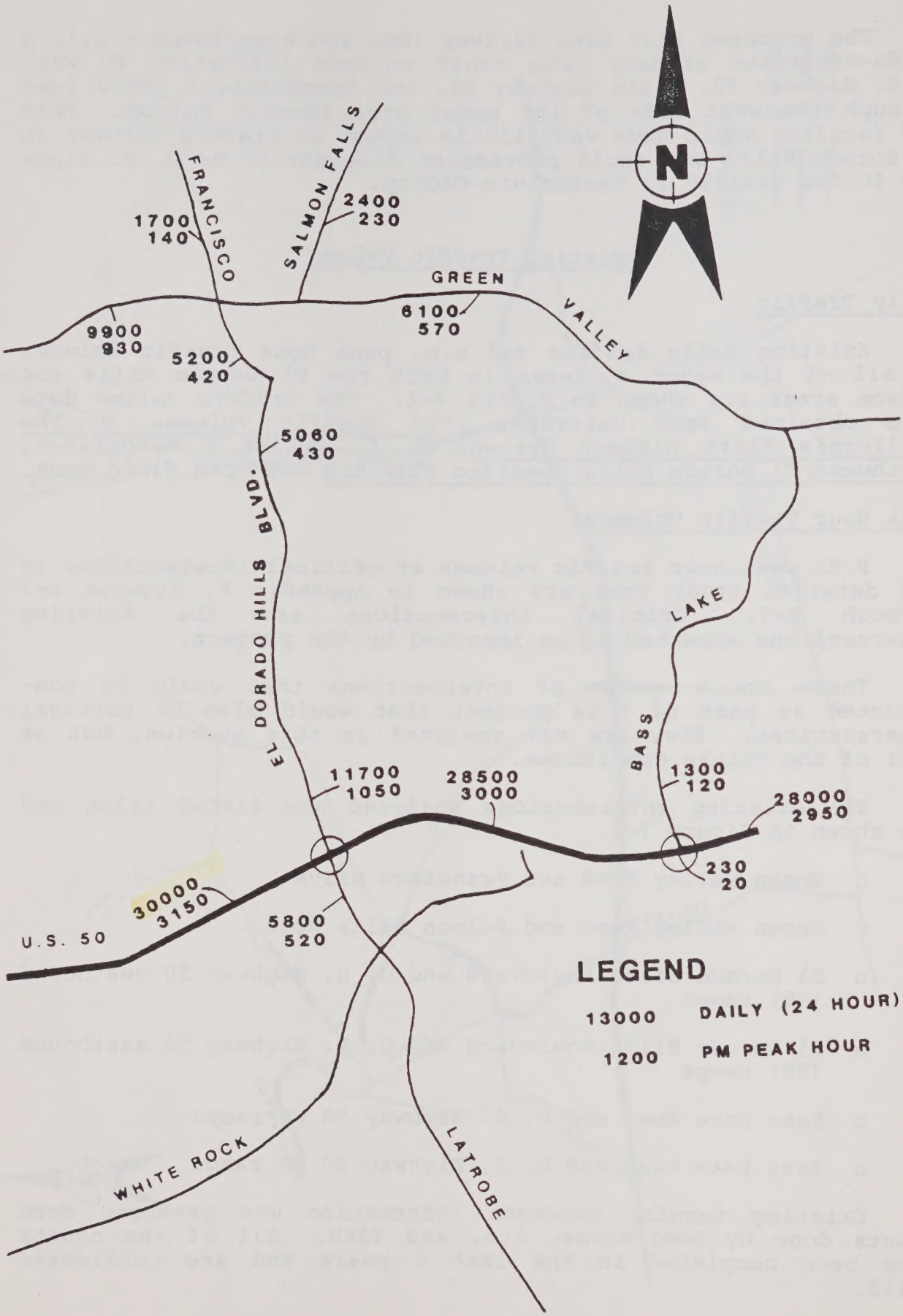
P.M. peak hour traffic volumes at critical intersections in the detailed study area are shown in Appendix E, Figures E-1 through E-7. Critical intersections are the existing intersections expected to be impacted by the project.

There are a number of intersections that would be constructed as part of this project that would also be critical intersections. They are not analyzed in this section, but as part of the future conditions.

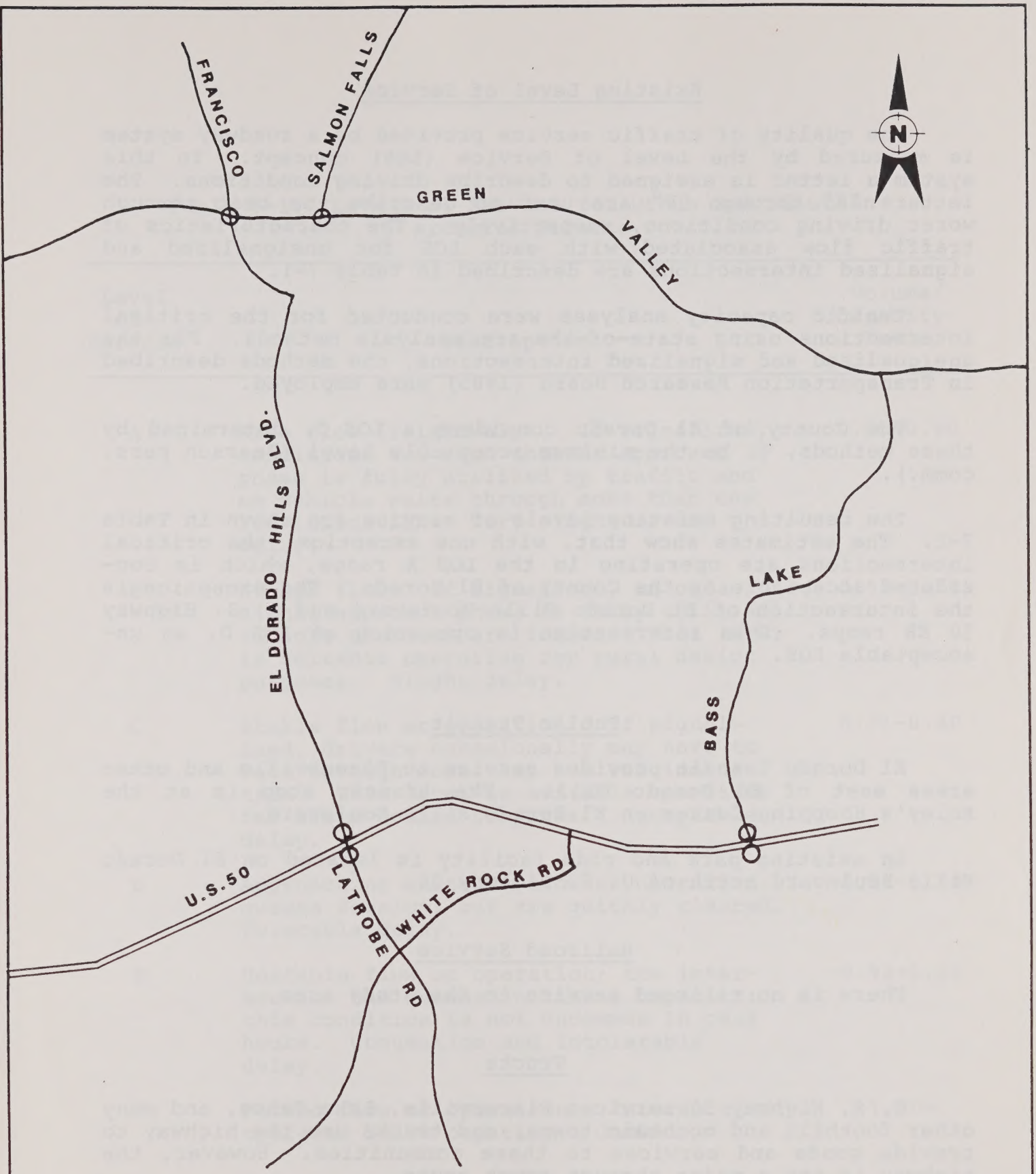
The existing intersections analyzed are listed below and are shown in Figure 7-3.

- Green Valley Road and Francisco Drive
- Green Valley Road and Salmon Falls Road
- El Dorado Hills Boulevard and U. S. Highway 50 westbound (WB) ramps
- El Dorado Hills Boulevard and U. S. Highway 50 eastbound (EB) ramps
- Bass Lake Road and U. S. Highway 50 WB ramps
- Bass Lake Road and U. S. Highway 50 EB ramps

Existing turning movement information was gathered from counts done by Omni-Means, Ltd. and TJKM. All of the counts have been completed in the last 2 years and are considered valid.



EXISTING TRAFFIC VOLUMES **FIGURE 7-2**



EXISTING CRITICAL INTERSECTIONS FIGURE 7-3

Existing Level of Service

The quality of traffic service provided by a roadway system is measured by the Level of Service (LOS) concept. In this system a letter is assigned to describe driving conditions. The letters "A" through "F" are used to describe the best through worst driving conditions, respectively. The characteristics of traffic flow associated with each LOS for unsignalized and signalized intersections are described in Table 7-1.

Traffic capacity analyses were conducted for the critical intersections using state-of-the-art analysis methods. For the unsignalized and signalized intersections, the methods described in Transportation Research Board (1985) were employed.

The County of El Dorado considers a LOS C, determined by these methods, to be the minimum acceptable level (Pearson pers. comm.).

The resulting existing levels of service are shown in Table 7-2. The estimates show that, with one exception, the critical intersections are operating in the LOS A range, which is considered acceptable by the County of El Dorado. The exception is the intersection of El Dorado Hills Boulevard and U. S. Highway 50 EB ramps. This intersection is operating at LOS D, an unacceptable LOS.

Public Transit

El Dorado Transit provides service to Placerville and other areas east of El Dorado Hills. The transit stop is at the Raley's Shopping Center on El Dorado Hills Boulevard.

An existing park and ride facility is located on El Dorado Hills Boulevard north of U. S. Highway 50.

Railroad Service

There is no railroad service to the study area.

Trucks

U. S. Highway 50 services Placerville, Lake Tahoe, and many other foothill and mountain towns, and trucks use the highway to provide goods and services to these communities. However, the highway is not a major through truck route.

None of the other major roadways in the El Dorado Hills area is heavily impacted by trucks.

Table 7-1. Levels of Service for Urban and Suburban Arterial Streets

Level of Service	Description	Volume/ Capacity Ratio
A	Free flow (relatively). If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits through more than one red indication. Very slight or no delay.	0.00-0.60
B	Stable flow. If signalized, an occasional approach phase is fully utilized; vehicle platoons are formed. This level is suitable operation for rural design purposes. Slight delay.	0.61-0.70
C	Stable flow or operation. If signalized, drivers occasionally may have to wait through more than one red indication. This level is suitable operation for urban design purposes. Acceptable delay.	0.71-0.80
D	Approaching unstable flow or operation; queues develop, but are quickly cleared. Tolerable delay.	0.81-0.90
E	Unstable flow or operation; the intersection has reached ultimate capacity; this condition is not uncommon in peak hours. Congestion and intolerable delay.	0.91-1.00
F	Forced flow or operation. Intersection operates below capacity. Jammed.	1.00+

Source: Transportation Research Board 1985.

Table 7-2. Analysis of Existing Critical Intersections

Location of Intersection	Existing Traffic Levels With Existing Roadway Network	
	Level of Service	Volume/ Capacity Ratio
Green Valley Road and Francisco Drive	A	0.47
Green Valley Road and Salmon Falls Road	A	N/A
El Dorado Hills Blvd. and U. S. 50 WB Ramps	D (SB Left)	N/A
El Dorado Hills Blvd. and U. S. 50 EB Ramps	A	N/A
Bass Lake Road and U. S. 50 WB Ramps	A	N/A
Bass Lake Road and U. S. 50 EB Ramps	A	N/A

Source: TJKM Transportation Consultants 1987.

N/A = Not applicable because unsignalized.

Transportation Improvements

Improvements Planned Without the Project

The County of El Dorado Public Works Department conducted a study (Future Collector Road Location Study 1986) to determine the possible location of future collector roads in the El Dorado Hills/Cameron Park area. Figure 7-4 shows the results of this study. The roads identified in this study only show general location and need for future roads, and none of them is currently funded for construction by the county.

A detailed alternatives study (Bass Lake Road Realignment, Gene E. Thorne and Associates, Inc. 1987), is being completed for the realignment and widening of Bass Lake Road. A number of roadway alignments are being considered, but all alternatives include the widening of the road to a four-lane arterial and improvements to the U. S. Highway 50 interchange. Widening of Bass Lake Road is planned to be constructed in the next 5 years and is the only planned improvement assumed in this study.

Other potential improvements that could reduce traffic impacts to existing facilities include the construction of a new interchange with U. S. Highway 50 at the El Dorado and Sacramento County line (referred to as the County Line Interchange) and an extension of Park Drive into the City of Folsom.

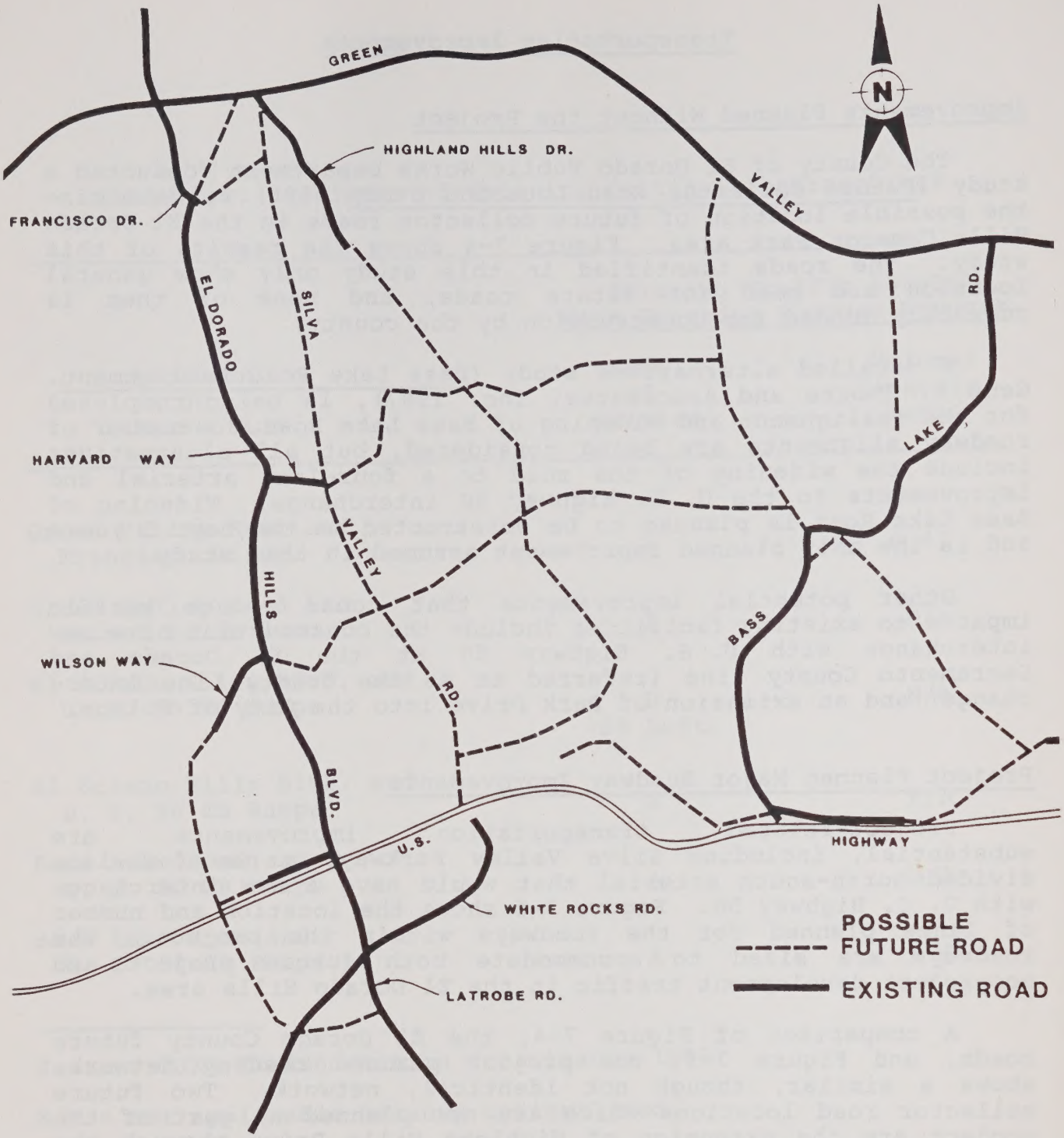
Project Planned Major Roadway Improvements

Project-related transportation improvements are substantial, including Silva Valley Parkway, a new four-lane divided north-south arterial that would have a new interchange with U. S. Highway 50. Figure 7-5 shows the location and number of lanes planned for the roadways within the project. The roadways are sized to accommodate both future project and nonproject development traffic in the El Dorado Hills area.

A comparison of Figure 7-4, the El Dorado County future roads, and Figure 7-5, the project planned roadway network, shows a similar, though not identical, network. Two future collector road locations which are not planned as part of the project are the extension of Highland Hills Drive through the project or the extension of Harvard Way through the project. In addition, a road shown from Bass Lake to Green Valley Road is not a part of the project.

The project planned major roadway improvements include:

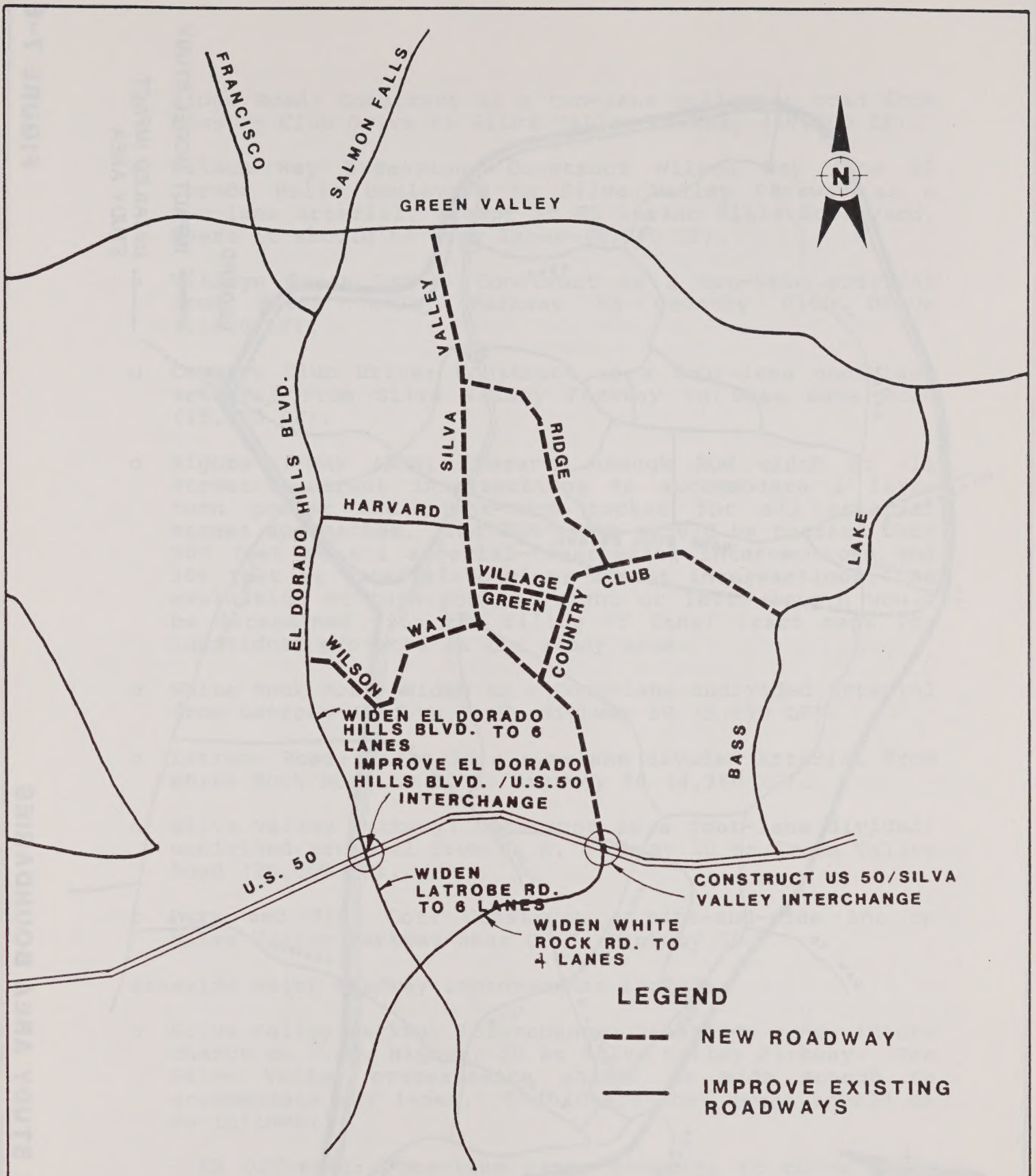
- Village Roads: Construct all roadways within each village as two-lane roadways with provision for left-turn pockets at intersections with arterial roadways.



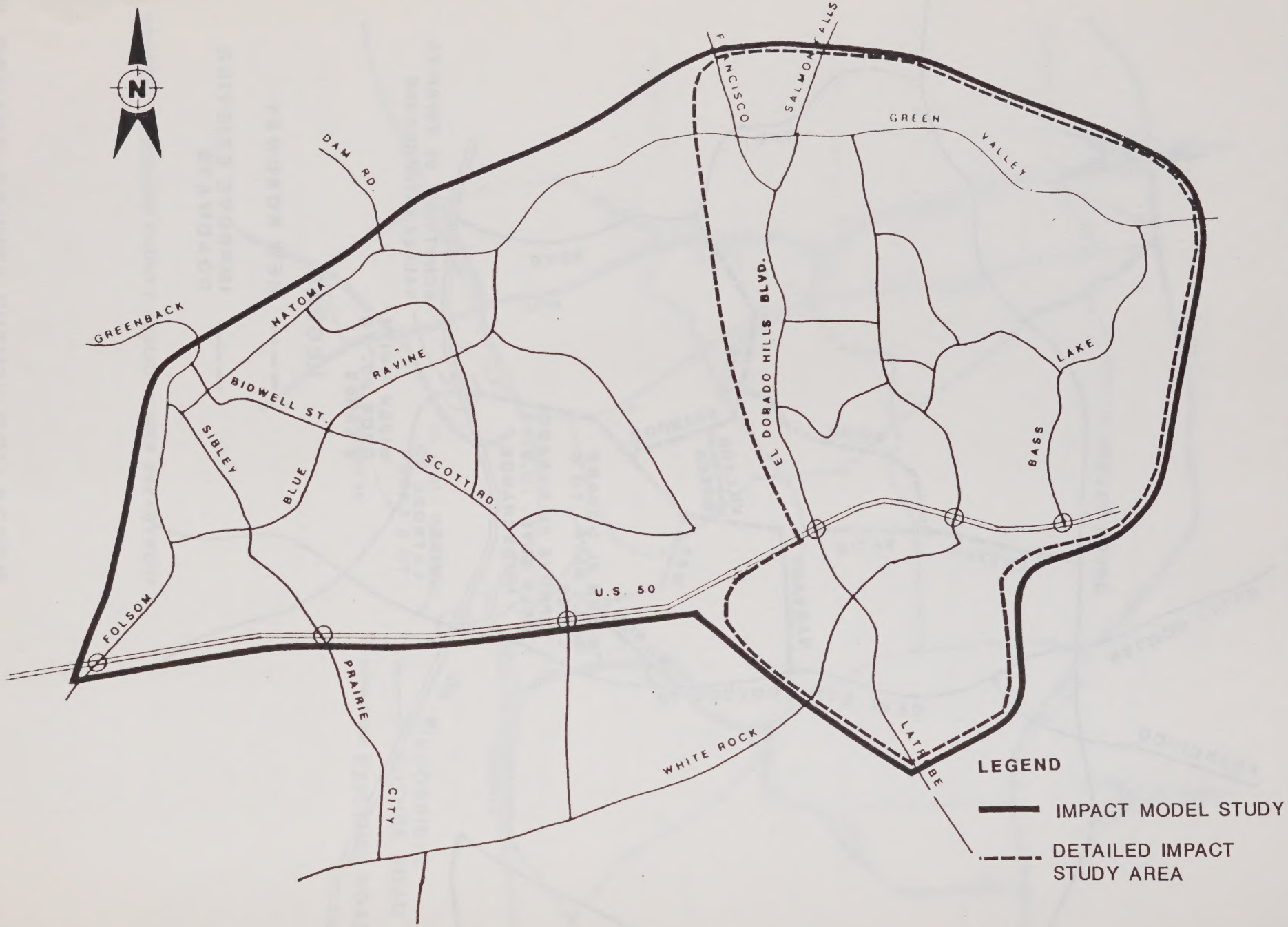
SOURCE: EL DORADO COUNTY PUBLIC WORKS DEPARTMENT

EL DORADO COUNTY FUTURE COLLECTOR ROAD LOCATION STUDY

FIGURE 7-4



PLANNED PROJECT MAJOR ROADWAY IMPROVEMENTS FIGURE 7-5



TRAFFIC STUDY AREA BOUNDARIES

FIGURE 7-6

- Ridge Road: Construct as a two-lane collector road from Country Club Drive to Silva Valley Parkway (10,000 LF).

- Wilson Way Extension: Construct Wilson Way from El Dorado Hills Boulevard to Silva Valley Parkway as a two-lane arterial, except at El Dorado Hills Boulevard, where it should be four lanes (6,000 LF).

- Village Green Drive: Construct as a two-lane arterial from Silva Valley Parkway to Country Club Drive (1,800 LF).

- Country Club Drive: Construct as a four-lane undivided arterial from Silva Valley Parkway to Bass Lake Road (15,800 LF).

- Rights-of-Way (ROW): Reserve enough ROW width at all street-to-street intersections to accommodate a left-turn pocket and right-turn pocket for all arterial street approaches. The ROW width should be carried back 500 feet at all arterial-to-arterial intersections and 300 feet at arterial-to-minor street intersections. An evaluation of turn pocket (right or left) length would be determined with the filing of final tract maps for individual projects in the study area.

- White Rock Road: Widen to a four-lane undivided arterial from Latrobe Road to U. S. Highway 50 (5,890 LF).

- Latrobe Road: Widen to a six-lane divided arterial from White Rock Road to U. S. Highway 50 (4,380 LF).

- Silva Valley Parkway: Construct as a four-lane divided/undivided arterial from U. S. Highway 50 to Green Valley Road (20,000 LF).

- Park and Ride Lot: Construct a park-and-ride lot on Silva Valley Parkway near U. S. Highway 50.

Areawide major roadway improvements include:

- Silva Valley Parkway Interchange: Construct a new interchange on U. S. Highway 50 at Silva Valley Parkway. The Silva Valley overcrossing should be wide enough to accommodate six lanes. The interchange ramps should be as follows:

  - EB Off-ramp: One-lane ramp, widening to three lanes at Silva Valley Parkway.

  - EB On-ramp: Three lanes at the intersection with Silva Valley Parkway, narrowing to a two-lane on-ramp to U. S. Highway 50.

- A northbound to WB single-lane on-ramp loop.

- A southbound to WB single-lane slip on-ramp.

- A WB off-ramp: Single-lane off the freeway, flairing to three lanes at Silva Valley Parkway.

o El Dorado Hills Boulevard: Improvement of the El Dorado Hills Boulevard/Latrobe Road/U. S. Highway 50 Interchange to include:

- Widening of the El Dorado Hills Boulevard/U. S. Highway 50 underpass to eight lanes.

- Construction of a new EB to southbound off-ramp.

- Widening of the existing WB off-ramp to accommodate three lanes at El Dorado Hills Boulevard

IMPACTS

Traffic Analysis Technique

Traffic volumes and resulting impacts for the El Dorado Hills area are presented in this section. Results were determined using the MINUTP transportation model and the analysis methodology detailed in the following discussions.

Model Description

A computerized modeling system called MINUTP was used to simulate and project future traffic conditions in the El Dorado Hills/Folsom area. The system, developed from the Federal Highway Administration (FHWA) transportation model Urban Transportation Planning System (UTPS) for large mainframe computers, uses a gravity model technique to assign traffic to a street system based on projected land uses and existing traffic levels. The MINUTP system is one of the more sophisticated transportation planning software systems currently available for a microcomputer. The system operates on an IBM Personal Computer and employs many of the programming options previously available only on a large urban system model utilizing a mainframe computer.

Model Development

To determine the traffic impacts of the project and other future developments in the El Dorado Hills/Folsom area, it was necessary to establish a total model study area and a detailed impact study area.

The total model study area included development in both El Dorado Hills and the City of Folsom. The detailed impact study area was the El Dorado Hills area. Figure 7-6 shows the area boundaries used in the model.

The City of Folsom was included in the study area because of its direct influence on and from development of the El Dorado Hills area; however, detailed recommendations for the Folsom street network are not included in this report. Currently, the firm of Wilbur Smith & Associates is conducting a detailed study of Folsom, and recommendations for the City of Folsom roadway network will be included in that report.

The study area was divided into 86 traffic zones. The boundaries of the traffic zones were determined by examining the location of existing and future roads, land uses, and other physical boundaries.

To account for travel to and from areas outside of the total impact study area, it was necessary to establish large super zones or cordons. The cordons included areas like eastern El Dorado County, Orangevale, and Sacramento. Table 7-3 shows the cordons and their service areas.

The model directly accounts for interaction between traffic zones within the study area (internal-internal trips) and between traffic zones and cordons (internal-external/external-internal trips). Trips that pass through the study area without any origin or destination in the area (external-external trips) were determined by calculating the existing number of through trips and then factoring those values by a growth rate of 1 percent per year.

Trip Generation

Model study area trip generation is based on the types and quantities of land use within a traffic zone multiplied by a standard trip generation rate. The land use quantities could be acreage, square feet, number of employee types, dwelling units, or just about any quantity that has some form of trip generation rate associated with it. For this study, number of dwelling units and number of acres were used.

Trip generation rates were taken from the Institute of Transportation Engineers Trip Generation (1982). A summary of the trip generation rates is shown in Table 7-4. In general, trip generation for each zone is defined as productions and attractions. Residential uses are typically trip producers, and commercial and industrial uses are trip attractors. Land use data for the study area were obtained from the El Dorado County Planning Department (Dunn pers. comm. and Walters pers. comm.) and the City of Folsom Planning Department (Kortick pers. comm. and Jenkins pers. comm.).

Table 7-3. External Cordons Service Area Assumptions

Cordon Station	Service Area
151 (White Rock Road)	Sacramento County Sunrise Area
152 (Scott Road)	South Sacramento County
153 (Greenback Lane)	Orangevale, Citrus Heights, Roseville
154 (Francisco Drive)	North El Dorado County
155 (Salmon Falls Road)	North El Dorado County
156 (Green Valley Road)	Placerville and East El Dorado County
157 (Folsom Dam Road)	Roseville, Placer County
158 (U. S. Highway 50)	Placerville, South Lake Tahoe and East El Dorado County
159 (Bass Lake Road)	South El Dorado County
160 (Latrobe Road)	South El Dorado County
161 (U. S. Highway 50)	Sacramento
162 (Country Club Drive)	Cameron Park

Source: TJKM Transportation Consultants 1987.

Table 7-4. Trip Generation Rates

Land Use Type	Trip Generation Rate: Trip Ends Per Dwelling Unit	Trip Generation Rate: Trip Ends Per Acre
Single-Family		
Low Density (0-1 DU/AC)	1.5	
Medium Density (2-4 DU/AC)	1.0	
High Density (5-7 DU/AC)	0.8	
Multi-Family (10+ DU/AC)	0.6	
Neighborhood Commercial		50
Highway Commercial		100
Service Commercial		30
Light Industrial		10
Park		0.4
School		5
Office		18
Prison		2
Village Green/ Community Center		20
Golf Course		0.4
Open Space		1

Source: TJKM Transportation Consultants 1987.

Trip Distribution

To determine the interaction of travel within and between traffic zones and cordon stations, the MINUTP system utilizes a standard gravity distribution model. In concept, the gravity model assesses the attractiveness of zones based on non-residential activities. It also assumes that destinations that are closer or require less travel time for a specific trip purpose are more attractive than alternative destinations that are further away. The total strength of the attractive force is a function of the size of the attraction and the difference in travel time of competing destinations.

In calculating the distribution of traffic within and through the study area, several parameters needed to be defined. The internal/external distributional split was determined for residentially generated trips or productions. To accomplish this it was necessary to divide both production and attraction trips into three trip categories: home-work, home-other, and nonhome based. Data on percentages of production trips in each of the home-based trip categories were derived from the Institute of Transportation Engineers Transportation and Traffic Engineers Handbook (1982). Table 7-5 shows the calculated internal/external production trip distribution. The values in Table 7-5 were calculated based on trip type and total number of attractions in each trip type category within the model study area. Table 7-6 presents the attraction internal/external trip distribution.

The internal/external trip distributions for both production and attraction trips reflect the large amount of planned industrial (900 acres) and commercial (300 acres) development or attraction trips in the El Dorado Hills area and the lack of production trips that could satisfy these attractions in a balanced production/attraction manner. Because of the imbalance in productions and attractions, a large number of trips must come from outside of the El Dorado Hills area to satisfy the area's attraction trip demands.

In addition to determining the internal/external distributions, a directional distribution for trips entering or leaving the study area needed to be established. Trips were assigned to each external cordon by using the total internal/external productions and attractions by trip category and the cordon's access to residential, industrial, and commercial land uses. The overall directional distribution is shown in Table 7-7.

Traffic Assignment

A capacity restraint methodology was used in assigning the traffic generated by the study area to the street network. Capacity restraint is a trip assignment methodology where traffic is assigned to the study area roadway network by increment.

Table 7-5. Production Trip Internal-Internal/ Internal-External Distribution

Trip Purpose	Internal-Internal (Percent)	Internal-External (Percent)	Total (Percent)
Home-Work	40	60	100
Home-Other	70	30	100
Non-Home Based	70	30	100

Source: TJKM Transportation Consultants 1987.

Table 7-6. Attraction Trip Internal-Internal/ Internal-External Distribution

Trip Purpose	Internal-Internal (Percent)	Internal-External (Percent)	Total (Percent)
Work	7	93	100
Other	5	95	100
Non-Home Based	24	76	100

Source: TJKM Transportation Consultants 1987.

Table 7-7. Distribution of Specific Plan Traffic

Percent of Traffic				
North (Percent)	East (Percent)	West (Percent)	South (Percent)	Total (Percent)
10	33	53	4	100

Source: TJKM Transporation Consultants 1987.

As various facilities approach capacity, traffic is reassigned to less crowded facilities. This is done within the MINUTP model through the lowering of link speeds on facilities approaching or exceeding over-capacity. The capacities assumed for the roadways within this study are shown in Table 7-8.

Analysis Model Alternatives

Two future time periods were analyzed in the traffic study to determine impacts on the study area network: build out of the project (1997) and build out of the El Dorado Hills area (2010).

To estimate the level of developments in the City of Folsom at these time periods, the East Folsom Market Area Study was used (Angus McDonald & Associates 1987). Land use levels for 1997 were assumed to be equivalent to the Baseline Alternative in that report; 2010 levels were assumed to be equivalent to the Alternative 1 levels.

A list of future land uses used in this study in both El Dorado Hills and Folsom are included in Chapter 17.

Roadway Network

The roadway network assumed in the analysis included existing roadways, planned county improvements to existing roadways (widening of Bass Lake Road), and roadways constructed as part of the project. Figure 7-7 shows the network.

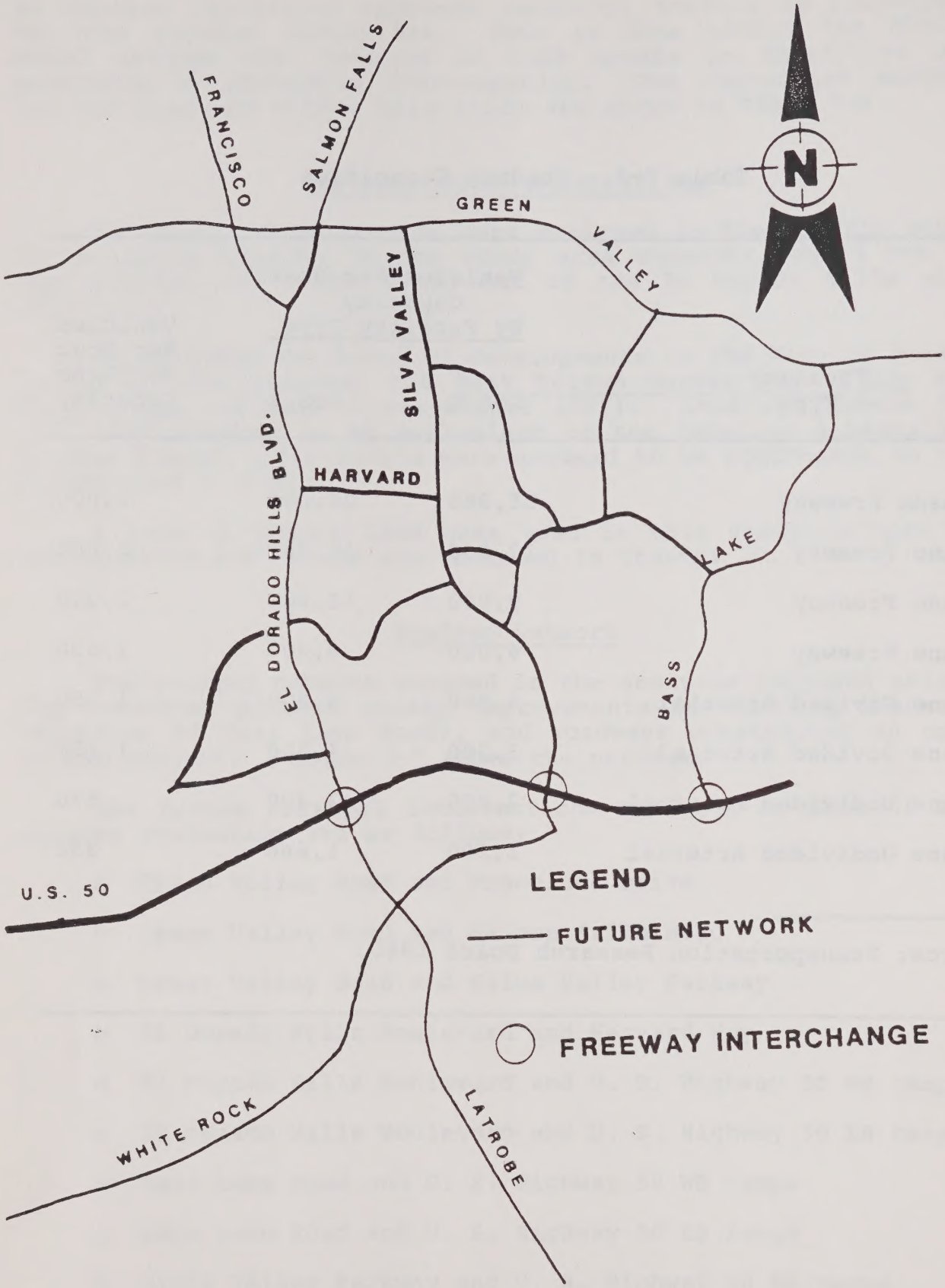
The future critical intersections analyzed as part of the impacts evaluation are as follows:

- Green Valley Road and Francisco Drive
- Green Valley Road and Salmon Falls Road
- Green Valley Road and Silva Valley Parkway
- El Dorado Hills Boulevard and Harvard Way
- El Dorado Hills Boulevard and U. S. Highway 50 WB ramps
- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps
- Bass Lake Road and U. S. Highway 50 WB ramps
- Bass Lake Road and U. S. Highway 50 EB ramps
- Silva Valley Parkway and U. S. Highway 50 WB ramps
- Silva Valley Parkway and U. S. Highway 50 EB ramps

Table 7-8. Roadway Capacities

Facility Type	Vehicles Per Hour Capacity By Facility Type LOS C	LOS F	Vehicles Per Hour Per Lane Capacity
10-Lane Freeway	15,000	20,000	2,000
8-Lane Freeway	12,000	16,000	2,000
6-Lane Freeway	9,000	12,000	2,000
4-Lane Freeway	6,000	8,000	2,000
6-Lane Divided Arterial	4,500	6,900	1,150
4-Lane Divided Arterial	3,500	4,500	1,150
4-Lane Undivided Arterial	2,500	3,300	830
2-Lane Undivided Arterial	1,500	1,660	830

Source: Transportation Research Board 1985.



FUTURE ROADWAY NETWORK WITH PROJECT

FIGURE 7-7

- Silva Valley Parkway and Country Club Road
- Silva Valley Parkway and Wilson Way Extension
- Silva Valley Parkway and Village Green Drive
- Silva Valley Parkway and Harvard Way
- Country Club Road and Village Green Drive

Figure 7-8 shows the location of the future critical intersections studied.

It was assumed that all of these intersections would be signalized for all of the conditions studied, except for the existing conditions.

Project-Related Traffic

Trip Generation

7-10

Table 7-9 shows the trips that would be generated by the project (EDHI) and Plan Area. The analysis contained in this EIR assessed the impacts of p.m. peak hour traffic. The number of trips was calculated by applying the trip generation rates shown in Table 7-4 to the amount of land use proposed in the project and Plan Area. Table 7-9 reflects only the land uses in the Specific Plan area are shown. The table does not include all other cumulative land uses in the El Dorado Hills area.

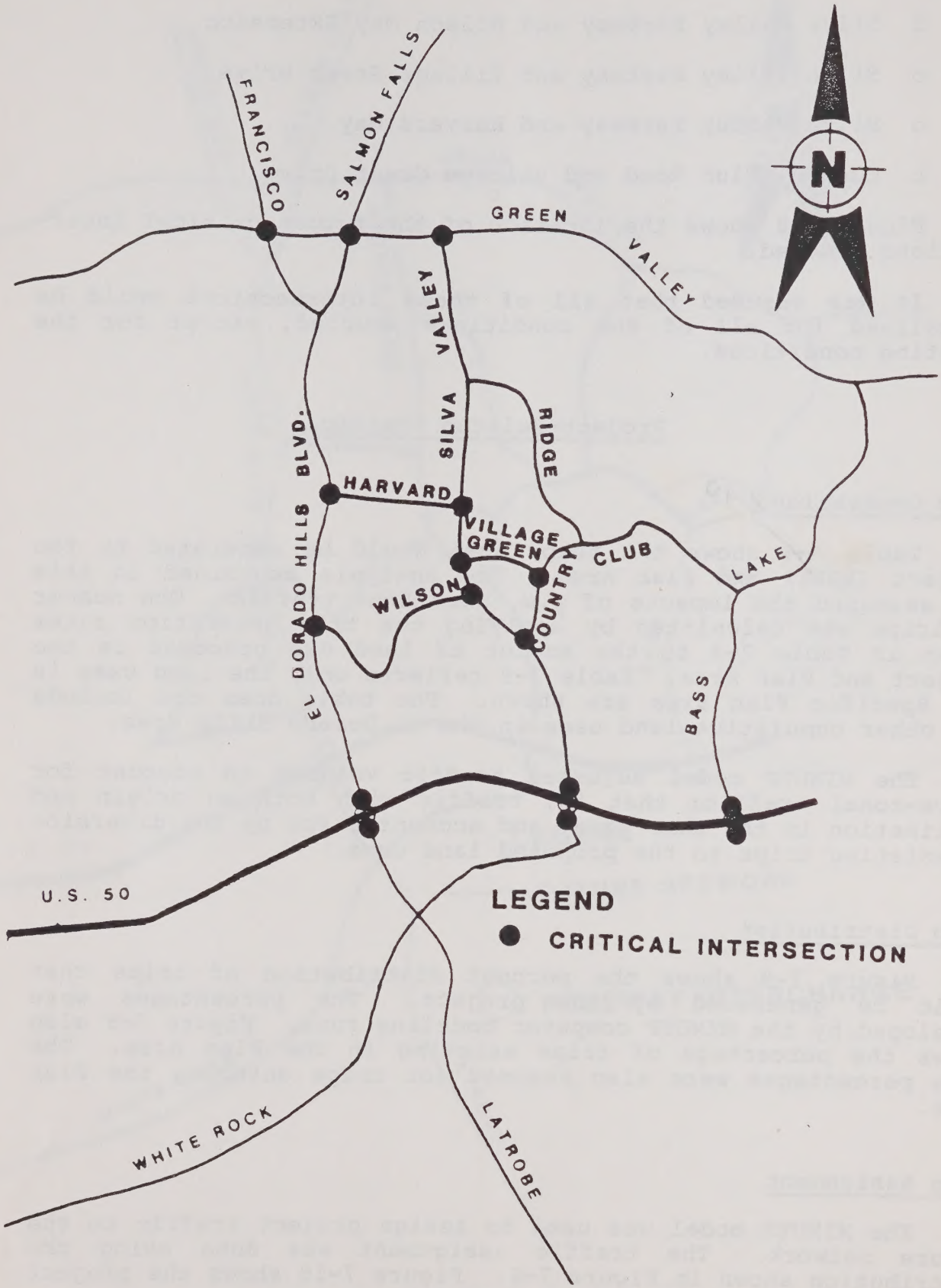
The MINUTP model adjusted traffic volumes to account for intra-zonal traffic; that is, traffic with both an origin and destination in the same zone, and accounted for by the diversion of existing trips to the proposed land uses.

Trip Distribution

Figure 7-9 shows the percent distribution of trips that would be generated by the project. The percentages were developed by the MINUTP computer modeling runs. Figure 7-9 also shows the percentage of trips existing in the Plan Area. The same percentages were also assumed for trips entering the Plan Area.

Trip Assignment

The MINUTP model was used to assign project traffic to the future network. The traffic assignment was done using the distribution shown in Figure 7-9. Figure 7-10 shows the project traffic assigned to the roadway network.



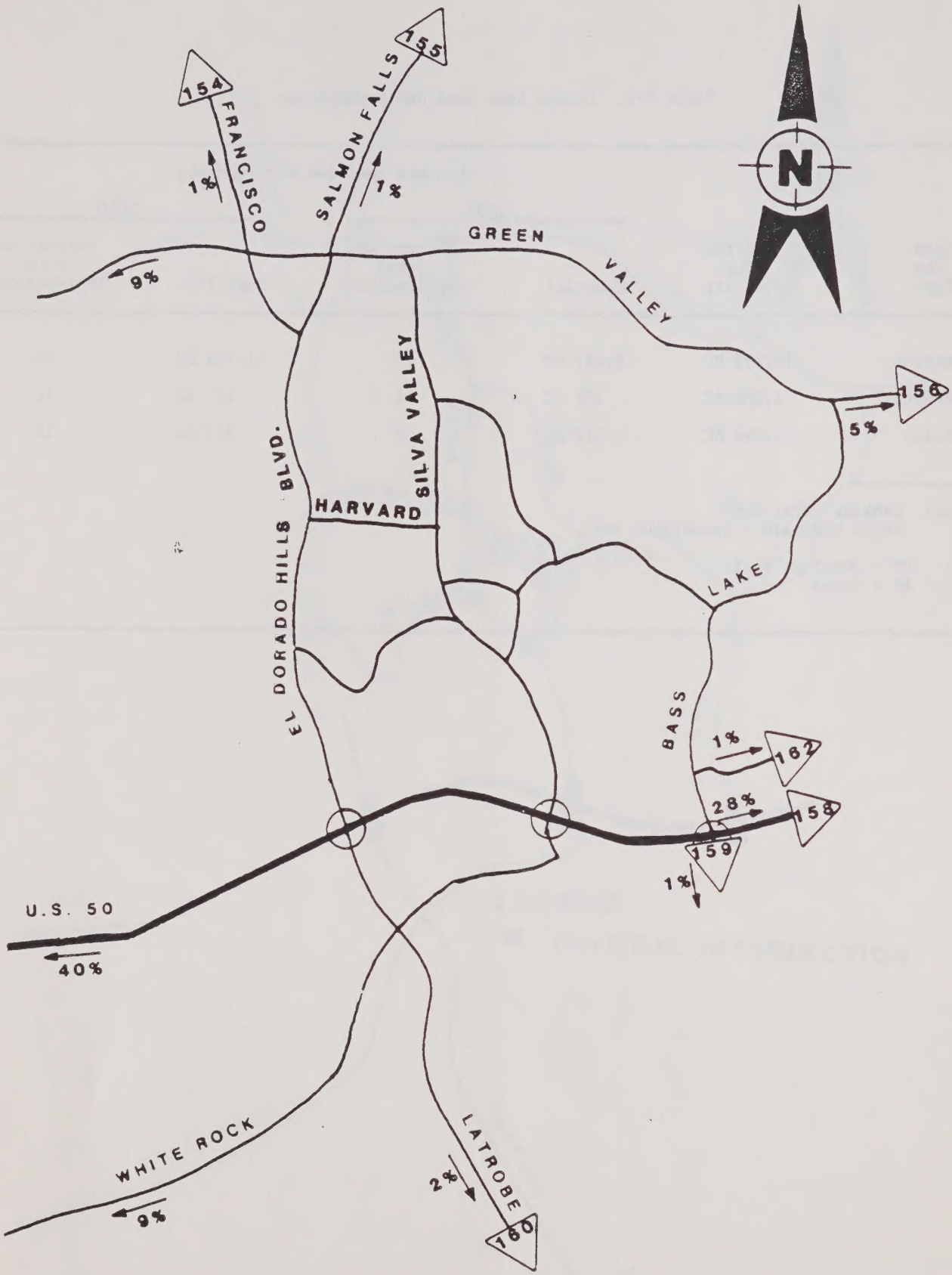
FUTURE CRITICAL INTERSECTIONS **FIGURE 7-8**

Table 7-9. Folsom Area Land Use Assumptions

Land Use Type	Applied For Quantity	Assumed Land Use Developments 1997 Quantity	1997 Percent of Total Applications	2010 Quantity	2010 Percent of Total Applications
Residential	19,375 DU	8,647 DU	45	11,183 DU	58
Office/Retail	1,208 AC	136 AC	11	137 AC	11
Industrial	1,096 AC	213 AC	19	237 AC	22

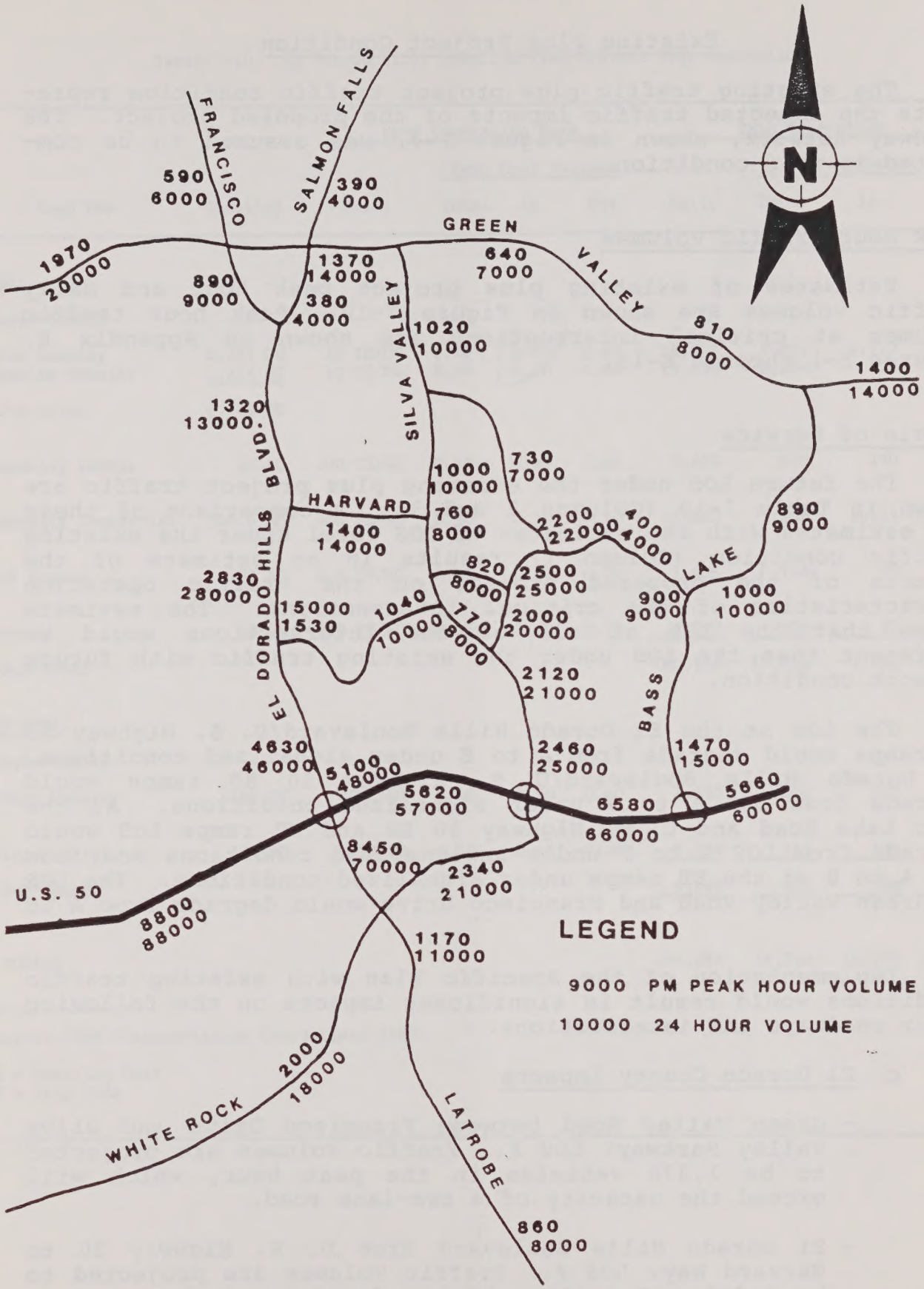
Sources: Jenkins pers. comm.
Angus McDonald & Associates 1987.

Notes: DU = Dwelling Units
AC = Acres



PROJECT DISTRIBUTION AND EXTERNAL CORDONS

FIGURE 7-9



EXISTING PLUS PROJECT
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-10

Existing Plus Project Condition

The existing traffic plus project traffic condition represents the expected traffic impacts of the proposed project. The roadway network, shown in Figure 7-7, was assumed to be completed in this condition.

Peak Hour Traffic Volumes

Estimates of existing plus project peak hour and daily traffic volumes are shown in Figure 7-10. Peak hour traffic volumes at critical intersections are shown in Appendix E, Figures E-1 through E-15.

Levels of Service

The future LOS under the existing plus project traffic are shown in Table 7-10 (Columns 2 and 3). A comparison of these LOS estimates with the estimates of LOS level under the existing traffic condition (Column 1) results in an estimate of the impacts of the proposed project on the traffic operation characteristics of the critical intersections. The estimate shows that the LOS at all of the intersections would be different than the LOS under the existing traffic with future network condition.

The LOS at the El Dorado Hills Boulevard/U. S. Highway 50 WB ramps would degrade from A to E under signalized conditions. El Dorado Hills Boulevard/U. S. Highway 50 EB ramps would degrade from LOS A to F under signalized conditions. At the Bass Lake Road and U. S. Highway 50 EB and WB ramps LOS would degrade from LOS A to F under unsignalized conditions and from LOS A to B at the EB ramps under signalized conditions. The LOS at Green Valley Road and Francisco Drive would degrade from A to F.

Implementation of the Specific Plan with existing traffic conditions would result in significant impacts on the following major roadways and intersections.

- El Dorado County Impacts

  - Green Valley Road between Francisco Drive and Silva Valley Parkway: LOS F. Traffic volumes are projected to be 1,370 vehicles in the peak hour, which will exceed the capacity of a two-lane road.

  - El Dorado Hills Boulevard from U. S. Highway 50 to Harvard Way: LOS F. Traffic volumes are projected to be 2,830 and 4,630 vehicles in the peak hour, which will exceed the capacity of a two-lane and four-lane divided arterial.

Table 7-10. El Dorado Hills Specific Plan Project Trip Generation

Land Use	Quantity	Trip Generation Rate: Daily	Peak Hour Percent: Total	In	Out	Trip Generation: Daily	Peak Hour: Total	In	Out
EDHI:									
Single-Family									
Low Density	5,234 DU	15 TE/DU	0.10	0.60	0.40	78,510	7,851	4,710	3,140
Medium Density	1,214 DU	10 TE/DU	0.10	0.60	0.40	12,140	1,214	728	486
Sub-Total	6,448 DU								
Community Center	27 AC	200 TE/AC	0.10	0.50	0.50	5,400	540	270	270
Community Commercial	255.6 AC	300 TE/AC	0.10	0.50	0.50	76,680	7,668	3,834	3,834
Golf Course	370 AC	3.8 TE/AC	0.11	0.50	0.50	1,406	140	70	70
Schools	60 AC	100 TE/AC	0.05	0.30	0.70	6,000	300	90	210
Sub-Total						180,136	17,713	9,702	8,011
NON-EDHI:									
Single-Family									
High Density	380 DU	8 TE/DU	0.10	0.60	0.40	3,040	304	182	122
Multi-Family	518 DU	6 TE/DU	0.10	0.60	0.40	3,108	311	186	125
Sub-Total						6,148	615	368	247
TOTALS						186,284	18,328	10,070	8,248

Source: TJKM Transportation Consultants 1987.

DU = Dwelling Unit
TE = Trip Ends

- Green Valley Road and Francisco Drive: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS changes from A to F (from V/C 0.47 to 1.18).

- El Dorado Hills Boulevard and Harvard Way: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS changes from A to F (V/C 1.04).

- El Dorado Hills Boulevard and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS changes from 0 to F (V/C 1.35).

- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: LOS E. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS changes from A to E (V/C 0.97).

o <u>Areawide Impacts</u>

- U. S. Highway 50 west of county line: LOS F. Traffic volumes are projected to be 8,800 vehicles in the peak hour, which will exceed the capacity of a four-lane freeway.

- White Rock Road west of county line: LOS F. Traffic volumes are projected to be 1,630 to 2,000 vehicles in the peak hour, which will exceed the capacity of a two-lane roadway.

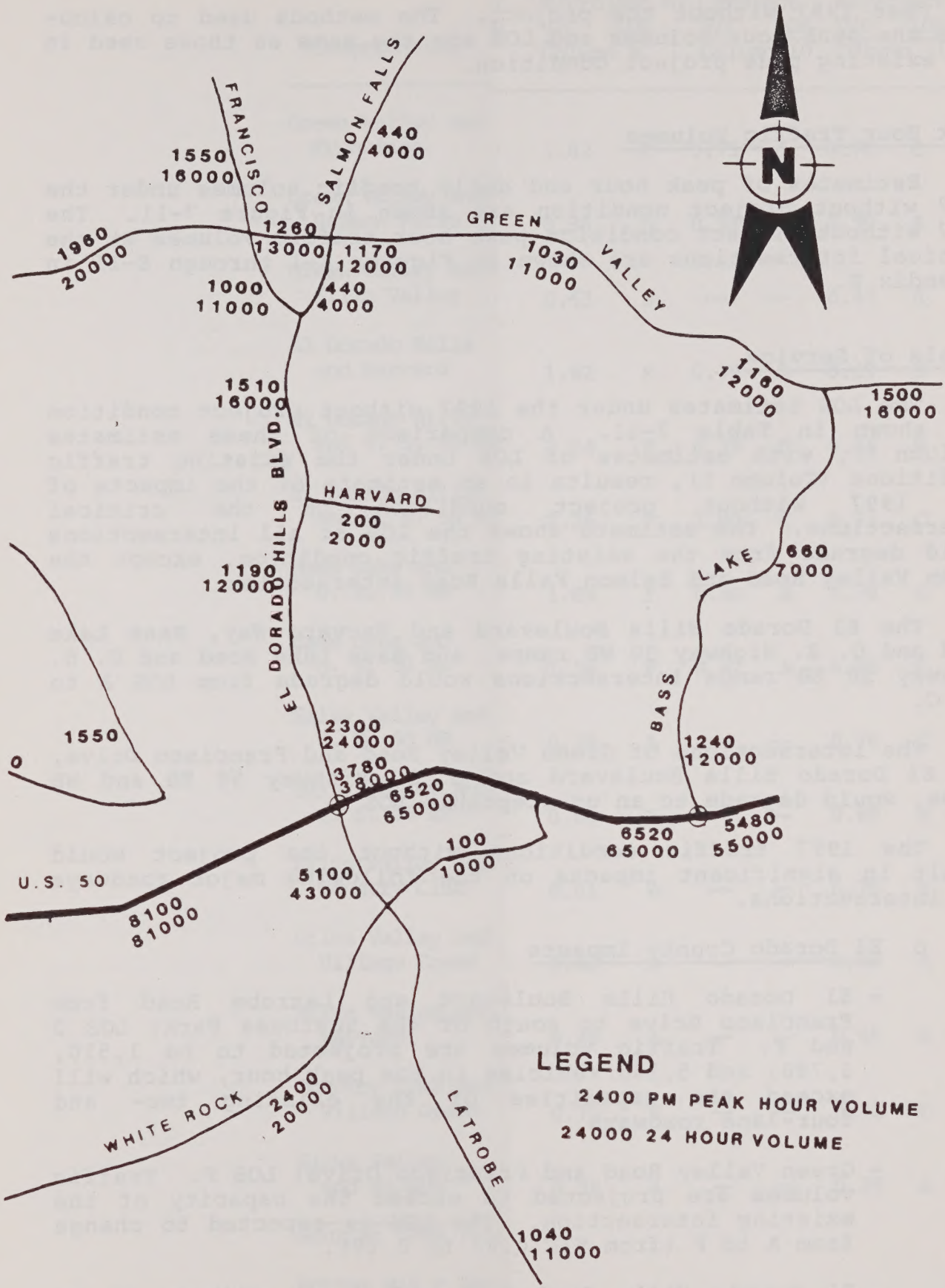
- Green Valley Road west of county line: LOS F. Traffic volumes are projected to be 1,970 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

Existing traffic conditions plus the project traffic would result in significant unavoidable impacts at Latrobe Road between U. S. Highway 50 and White Rock Road, even with the widening of this segment to a six-lane divided arterial. Impacts could be lessened with restriction of on-street parking and limiting of driveway access.

Figure 7-11 (existing plus project-mitigated), shows the future roadway network lane needs based on traffic levels shown in Figure 7-10 and the roadway LOS C capacities shown in Table 7-8.

1997 Without Project Condition

The 1997 without project condition is an estimate of the traffic impacts that would result from cumulative development in



1997 WITHOUT PROJECT
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-11

the year 1997 without the project. The methods used to calculate the peak hour volumes and LOS are the same as those used in the existing plus project condition.

Peak Hour Traffic Volumes

Estimates of peak hour and daily traffic volumes under the 1997 without project condition are shown in Figure 7-11. The 1997 without project condition peak hour traffic volumes at the critical intersections are shown in Figures E-1 through E-15 in Appendix E.

Levels of Service

The LOS estimates under the 1997 without project condition are shown in Table 7-11. A comparison of these estimates (Column 4), with estimates of LOS under the existing traffic conditions (Column 1), results in an estimate of the impacts of the 1997 without project condition on the critical intersections. The estimate shows the LOS at all intersections would degrade from the existing traffic condition, except the Green Valley Road and Salmon Falls Road intersection.

The El Dorado Hills Boulevard and Harvard Way, Bass Lake Road and U. S. Highway 50 WB ramps, and Bass Lake Road and U. S. Highway 50 EB ramps intersections would degrade from LOS A to LOS C.

The intersections of Green Valley Road and Francisco Drive, and El Dorado Hills Boulevard and U. S. Highway 50 EB and WB ramps, would degrade to an unacceptable LOS F.

The 1997 traffic conditions without the project would result in significant impacts on the following major roadways and intersections.

- El Dorado County Impacts

  - El Dorado Hills Boulevard and Latrobe Road from Francisco Drive to south of the Business Park: LOS D and F. Traffic volumes are projected to be 1,510, 3,780, and 5,100 vehicles in the peak hour, which will exceed the capacities of the existing two- and four-lane roadways.

  - Green Valley Road and Francisco Drive: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (from V/C 0.47 to 0.19).

  - El Dorado Hills Boulevard and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed

Table 7-11. Intersection Capacity Analysis

Intersection	Existing V/C Column 1	Existing LOS Column 1	Existing + Project Unmitigated V/C Column 2	Existing + Project Unmitigated LOS Column 2	Existing + Project Mitigated V/C Column 3	Existing + Project Mitigated LOS Column 3	1997 Unmitigated W/O Project V/C Column 4	1997 Unmitigated W/O Project LOS Column 4	1997 Unmitigated W/Project V/C Column 5	1997 Unmitigated W/Project LOS Column 5	1997 Mitigated W/O Project V/C Column 6	1997 Mitigated W/O Project LOS Column 6	1997 Mitigated W/Project V/C Column 7	1997 Mitigated W/Project LOS Column 7	2010 Unmitigated W/O Project V/C Column 8	2010 Unmitigated W/O Project LOS Column 8	2010 Unmitigated W/Project V/C Column 9	2010 Unmitigated W/Project LOS Column 9	2010 Mitigated W/O Project V/C Column 10	2010 Mitigated W/O Project LOS Column 10	2010 Mitigated W/Project V/C Column 11	2010 Mitigated W/Project LOS Column 11
Green Valley and Francisco	0.47	A	1.18	F	0.79	C	1.19	F	1.81	F	0.80	C	0.72	C	1.24	F	1.82	F	0.75	C	0.72	C
Green Valley and Salmon Falls	N/A	A*	0.65	B	N/A	N/A	0.48	A	0.77	C	0.48	A	0.44	A	0.59	A	0.88	D	0.59	A	0.50	A
Green Valley and Silva Valley	--	--	0.60	A	--	--	--	--	0.58	A	--	--	0.39	A	--	--	0.63	B	--	--	0.47	A
El Dorado Hills and Harvard	N/A	A*	1.04	F	0.62	B	0.77	C	1.63	F	0.77	C	0.71	C	0.96	E	1.82	F	0.49	A	0.69	B
El Dorado Hills and U. S. 50 WB	N/A	D*	1.35	F	0.69	B	1.43	F	1.90	F	0.77	C	0.71	C	1.25	F	2.04	F	0.79	C	0.66	B
El Dorado Hills and U. S. 50 EB	N/A	A*	0.97	E	0.74	C	1.47	F	2.12	F	0.69	B	0.77	C	1.80	F	2.36	F	1.00	C	0.72	C
Bass Lake and U. S. 50 WB	N/A	A*	0.69	B	N/A	N/A	0.77	C	1.45	F	0.47	A	0.75	C	1.22	F	1.89	F	0.40	A	0.78	C
Bass Lake and U. S. 50 EB	N/A	A*	0.64	B	N/A	N/A	0.71	C	1.32	F	0.34	A	0.69	B	0.77	C	1.38	F	0.42	A	0.73	C
Silva Valley and U. S. 50 WB	--	--	0.45	A	--	--	--	--	0.61	B	--	--	0.76	C	--	--	0.59	A	--	--	0.76	C
Silva Valley and U. S. 50 EB	--	--	0.60	A	--	--	--	--	0.75	C	--	--	0.65	B	--	--	0.60	A	--	--	0.69	B
Silva Valley and Country Club	--	--	0.60	A	--	--	--	--	0.59	A	--	--	0.59	A	--	--	0.61	B	--	--	0.70	B
Silva Valley and Village Green	--	--	0.43	A	--	--	--	--	0.15	A	--	--	0.38	A	--	--	0.46	A	--	--	0.48	A
Silva Valley and Harvard	--	--	0.30	A	--	--	--	--	0.38	A	--	--	0.41	A	--	--	0.49	A	--	--	0.49	A
Country Club and Village Green	--	--	0.72	C	--	--	--	--	0.52	A	--	--	0.67	B	--	--	0.70	B	--	--	0.72	C
Silva Valley and Wilson	--	--	0.27	A	--	--	--	--	0.12	A	--	--	0.29	A	--	--	0.38	A	--	--	0.39	A

Source: TJKM Transportation Consultants 1987.

Notes: N/A = Not applicable because intersection is unsignalized.
* = No signalized analysis.
Mitigated conditions always assumes signalization.

the capacity of the existing intersection. The LOS is expected to change from D to F (V/C ratio 1.43).

- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C ratio 1.47).

o Areawide Impacts

- U. S. Highway 50 from El Dorado Hills Boulevard to west of the county line: LOS F. Traffic volumes are projected to be between 8,100 and 11,500 vehicles in the peak hour, which will exceed the capacity of a four-lane freeway.

- White Rock Road from Latrobe Road west of the county line: LOS F. Traffic volumes are projected to be 2,400 vehicles in the peak hour, which will exceed the capacity of a two-lane roadway.

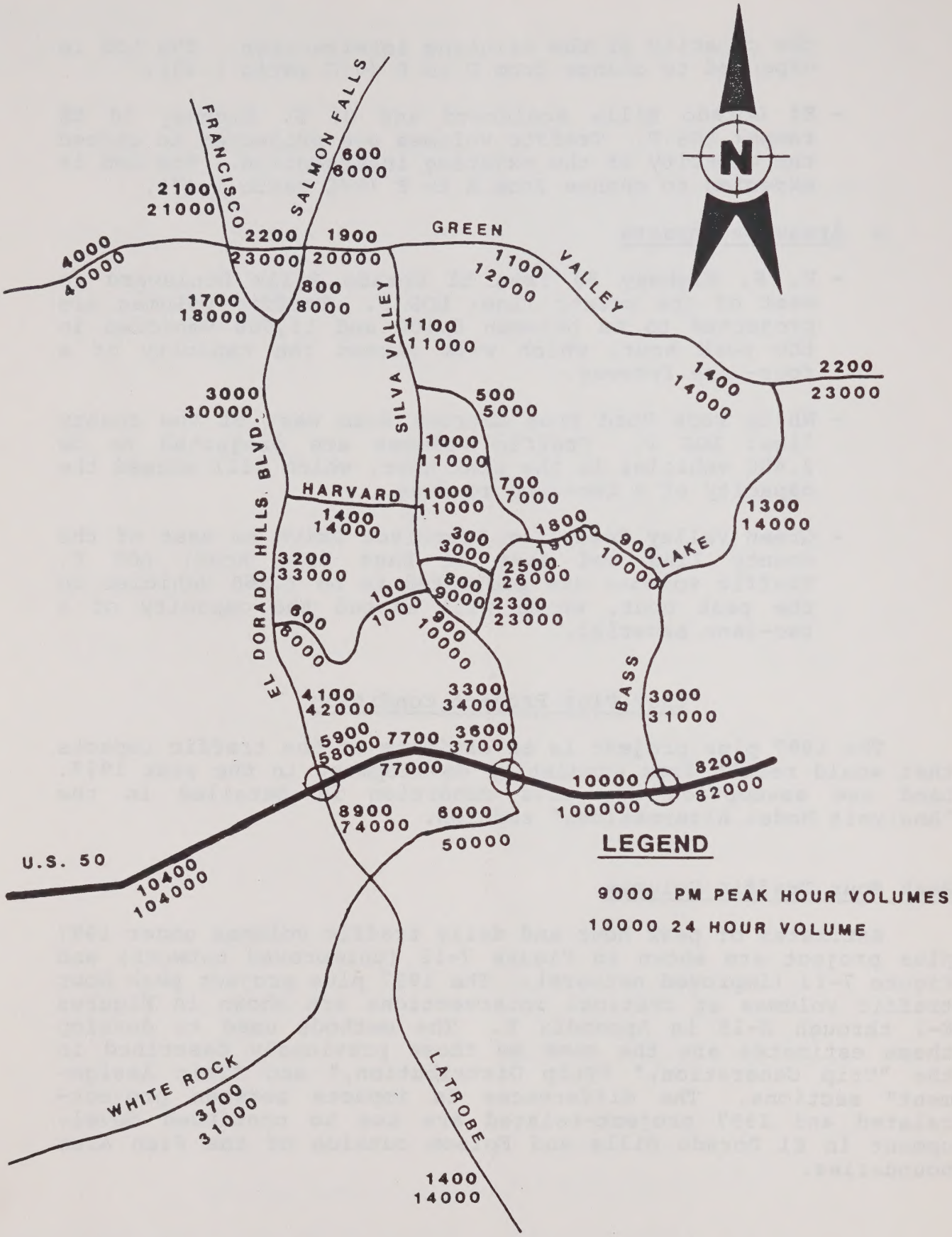
- Green Valley Road from Francisco Drive to west of the county line and east of Bass Lake Road: LOS F. Traffic volumes are projected to be 1,960 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

1997 Plus Project Condition

The 1997 plus project is an estimate of the traffic impacts that would result from cumulative development in the year 1997. Land use assumption for this condition is detailed in the "Analysis Model Alternatives" section.

Peak Hour Traffic Volumes

Estimates of peak hour and daily traffic volumes under 1997 plus project are shown in Figure 7-12 (unimproved network) and Figure 7-13 (improved network). The 1997 plus project peak hour traffic volumes at critical intersections are shown in Figures E-1 through E-15 in Appendix E. The methods used to develop these estimates are the same as those previously described in the "Trip Generation," "Trip Distribution," and "Trip Assignment" sections. The differences in impacts between project-related and 1997 project-related are due to continued development in El Dorado Hills and Folsom outside of the Plan Area boundaries.



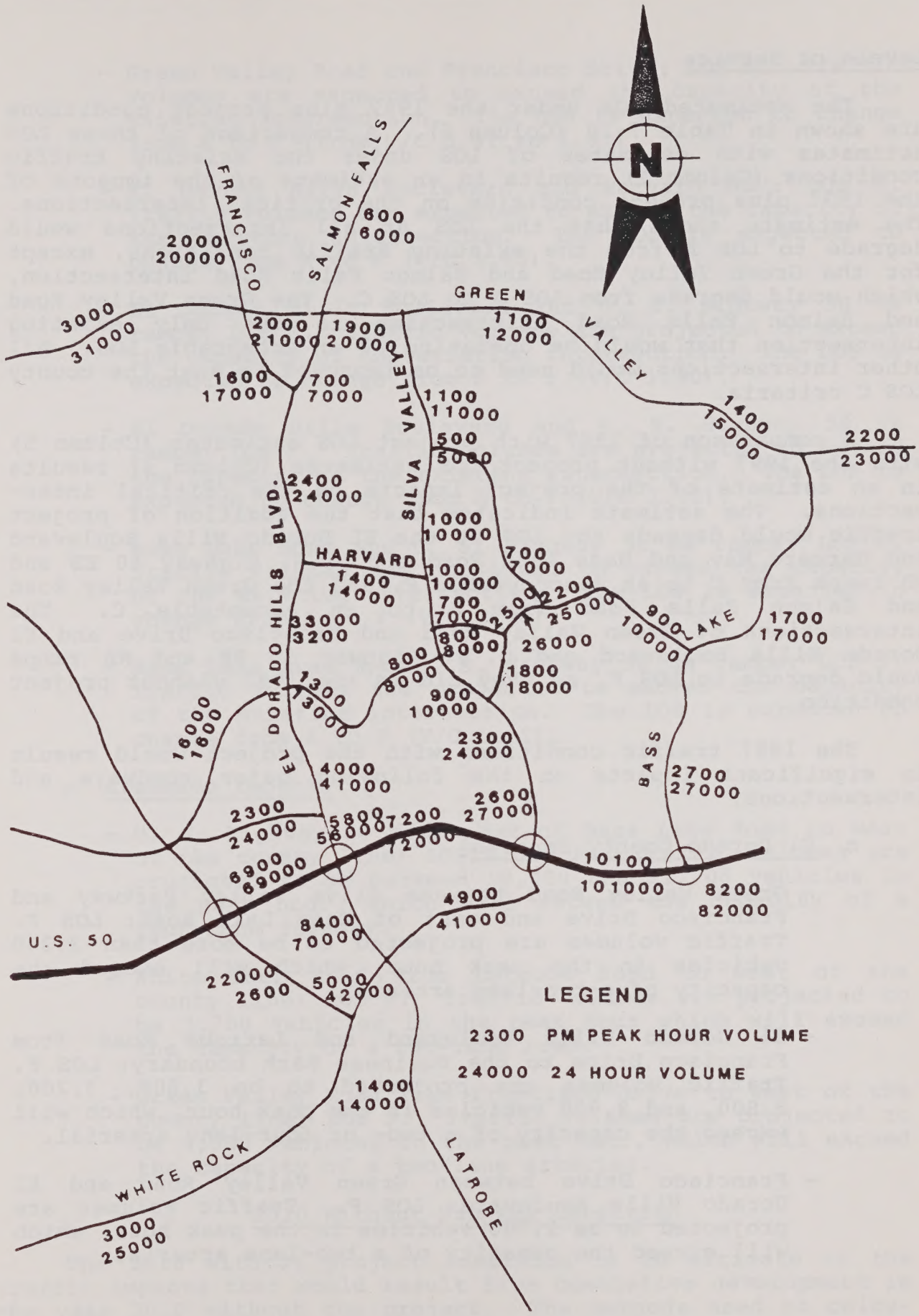
LEGEND

9000 PM PEAK HOUR VOLUMES

10000 24 HOUR VOLUME

1997 WITH PROJECT UNIMPROVED NETWORK
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-12



1997 PLUS PROJECT IMPROVED NETWORK
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-13

Levels of Service

The estimated LOS under the 1997 plus project conditions are shown in Table 7-10 (Column 5). A comparison of these LOS estimates with estimates of LOS under the existing traffic conditions (Column 1) results in an estimate of the impacts of the 1997 plus project condition on the critical intersections. The estimate shows that the LOS at all intersections would degrade to LOS F from the existing traffic conditions, except for the Green Valley Road and Salmon Falls Road intersection, which would degrade from LOS A to LOS C. The Green Valley Road and Salmon Falls Road intersection is the only existing intersection that would be operating at an acceptable LOS. All other intersections would need to be improved to meet the county LOS C criteria.

A comparison of 1997 with project LOS estimates (Column 5) with the 1997 without project LOS estimates (Column 4) results in an estimate of the project impacts on the critical intersections. The estimate indicates that the addition of project traffic would degrade the LOS at the EL Dorado Hills Boulevard and Harvard Way and Bass Lake Road and U. S. Highway 50 EB and WB ramps from C to an unacceptable F, and the Green Valley Road and Salmon Falls Road from A to an acceptable C. The intersections of Green Valley Road and Francisco Drive and El Dorado Hills Boulevard and U. S. Highway 50 EB and WB ramps would degrade to LOS F, as they did in the 1997 without project condition.

The 1997 traffic conditions with the project would result in significant impacts on the following major roadways and intersections.

o El Dorado County Impacts

- Green Valley Road between Silva Valley Parkway and Francisco Drive and east of Bass Lake Road: LOS F. Traffic volumes are projected to be more than 2,200 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

- El Dorado Hills Boulevard and Latrobe Road from Francisco Drive to the Business Park boundary: LOS F. Traffic volumes are projected to be 3,000, 3,200, 5,900, and 8,900 vehicles in the peak hour, which will exceed the capacity of a two- or four-lane arterial.

- Francisco Drive between Green Valley Road and El Dorado Hills Boulevard: LOS F. Traffic volumes are projected to be 1,700 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

- Green Valley Road and Francisco Drive: LOS F. Traffic volumes are expected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (from V/C 0.91 to 1.81).

- El Dorado Hills Boulevard and Harvard Way: LOS F. Traffic volumes are expected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.63).

- El Dorado Hills Boulevard and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from D to F (V/C 1.90).

- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 2.12).

- Bass Lake Road and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.45).

- Bass Lake Road and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.32).

o <u>Areawide Impacts</u>

- U. S. Highway 50 from east of Bass Lake Road to west of the county line: LOS E and F. Traffic volumes are projected to be between 10,400 and 11,700 vehicles in the peak hour, which will exceed the capacity of a four-lane freeway.

- White Rock Road from Latrobe Road to west of the county line: LOS F. Traffic volumes are projected to be 3,700 vehicles in the peak hour which will exceed the capacity of a two-lane road.

- Green Valley Road from Francisco Drive to west of the county line: LOS F. Traffic volumes are projected to be 4,000 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

2010 Without Project Condition

The 2010 without project condition is an estimate of the traffic impacts that would result from cumulative development in the year 2010 without the project. The methods used to calculate the peak hour volumes and LOS are the same as those used in the 1997 without project condition.

Peak Hour Traffic Volumes

Estimates of peak hour and daily traffic volumes under the 2010 without project condition are shown in Figure 7-14. The 2010 without project condition peak hour traffic volumes at the critical intersections are shown in Figures E-1 through E-15 in Appendix E.

Levels of Service

The estimated LOS under the 2010 without project condition are shown in Table 7-10 (Column 8). A comparison of these LOS estimates with estimates of LOS under the existing traffic network conditions (Column 1) results in an estimate of the impacts of the 2010 without project condition on the critical intersections. The estimate shows the LOS at all intersections would degrade from the existing traffic condition, except the Green Valley Road and Salmon Falls Road intersection. The only other existing intersection that would be operating at an acceptable LOS C or better would be the Bass Lake Road and U. S. Highway 50 EB ramps intersection (LOS C). All five other existing critical intersections are estimated to be operating at LOS E or F.

The 2010 traffic condition without the project would result in significant impacts on the following major roadways and intersections.

o El Dorado County Impacts

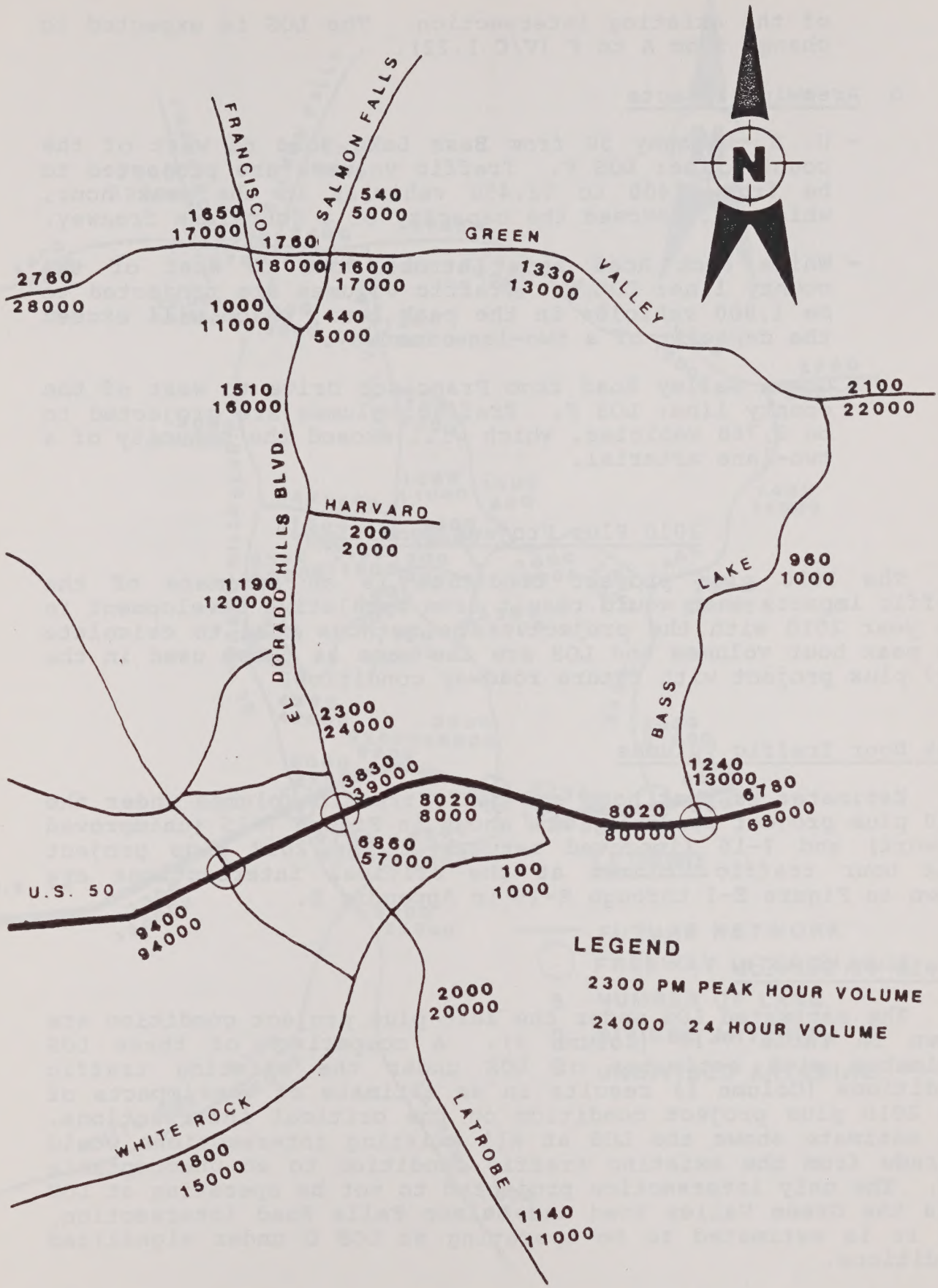
- Green Valley Road from Francisco Drive to Salmon Falls Road and east of Bass Lake Road: LOS F. Traffic volumes are projected to be 1,760 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

- El Dorado Hills Boulevard and Latrobe Road from Francisco Drive to south of the Business Park: LOS D and F. Traffic volumes are projected to be 1,510, 3,830 and 6,860, which will exceed the capacity of the existing two- and four-lane sections of the arterial.

- El Dorado Hills Boulevard and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from D to F (V/C 1.25).

- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.80).

- Bass Lake Road and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity



2010 WITHOUT PROJECT
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-14

of the existing intersection. The LOS is expected to change from A to F (V/C 1.22).

- Areawide Impacts

  - U. S. Highway 50 from Bass Lake Road to west of the county line: LOS F. Traffic volumes are projected to be from 9,400 to 12,450 vehicles in the peak hour, which will exceed the capacity of a four-lane freeway.

  - White Rock Road from Latrobe Road to west of the county line: LOS F. Traffic volumes are projected to be 1,800 vehicles in the peak hour, which will exceed the capacity of a two-lane roadway.

  - Green Galley Road from Francisco Drive to west of the county line: LOS F. Traffic volumes are projected to be 2,760 vehicles, which will exceed the capacity of a two-lane arterial.

2010 Plus Project Condition

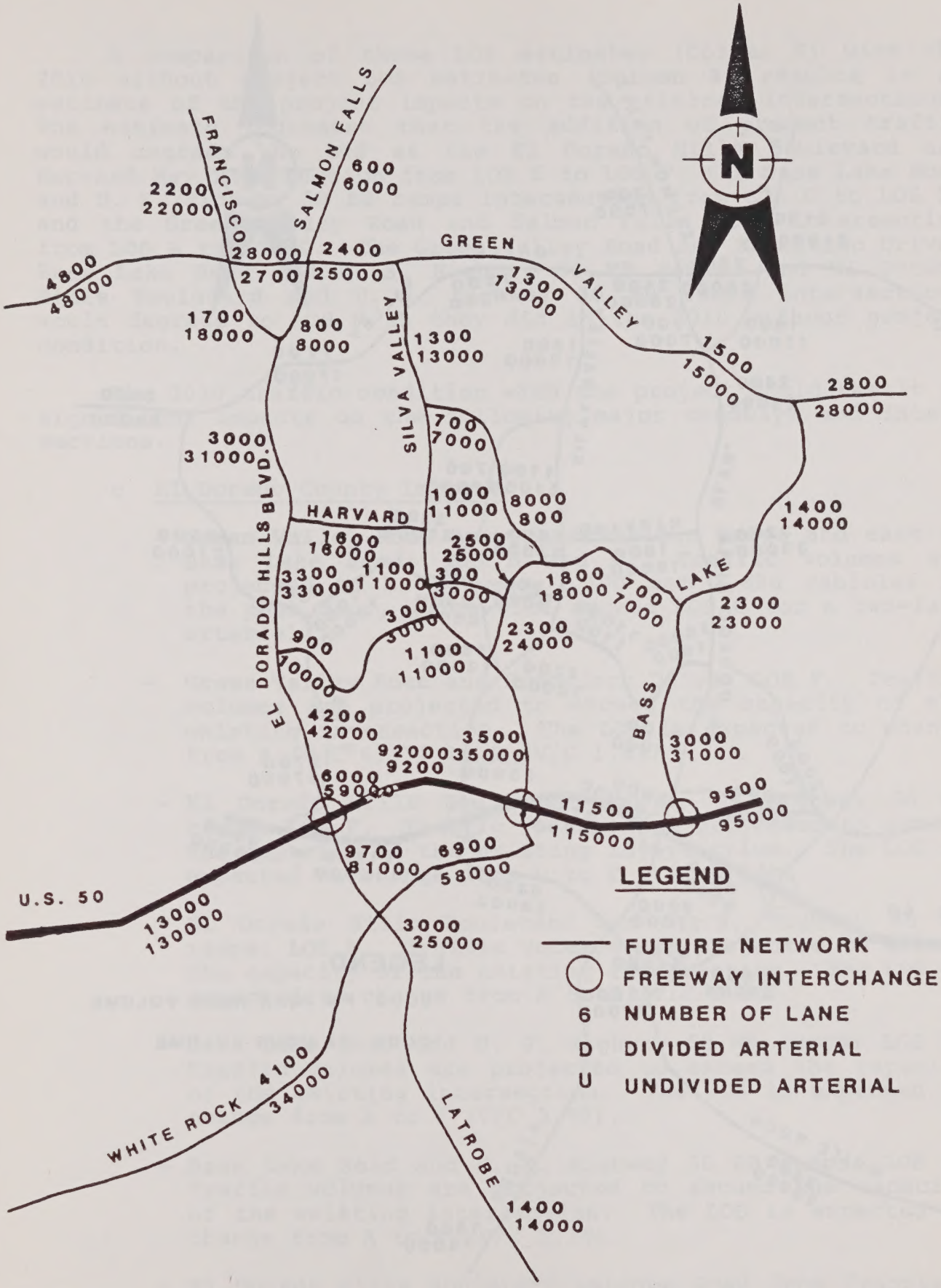
The 2010 plus project condition is an estimate of the traffic impacts that would result from cumulative development in the year 2010 with the project. The methods used to calculate the peak hour volumes and LOS are the same as those used in the 1997 plus project with future roadway condition.

Peak Hour Traffic Volumes

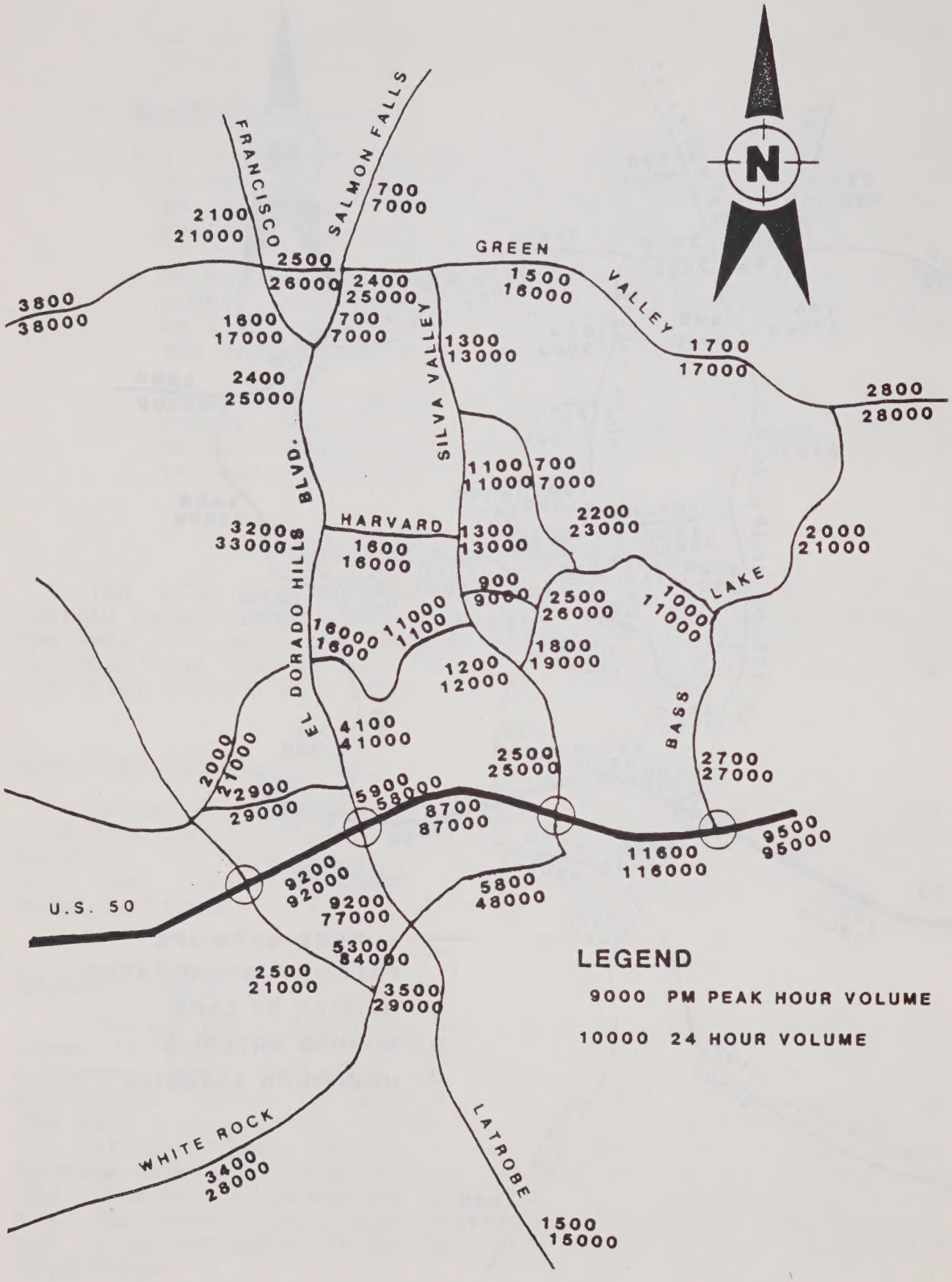
Estimates of peak hour and daily traffic volumes under the 2010 plus project condition are shown in Figure 7-15 (unimproved network) and 7-16 (improved network). The 2010 plus project peak hour traffic volumes at the critical intersections are shown in Figure E-1 through E-15 in Appendix E.

Levels of Service

The estimated LOS under the 2010 plus project condition are shown in Table 7-10 (Column 9). A comparison of these LOS estimates with estimates of LOS under the existing traffic conditions (Column 1) results in an estimate of the impacts of the 2010 plus project condition on the critical intersections. The estimate shows the LOS at all existing intersections would degrade from the existing traffic condition to an unacceptable LOS. The only intersection projected to not be operating at LOS F is the Green Valley Road and Salmon Falls Road intersection, and it is estimated to be operating at LOS D under signalized conditions.



2010 PLUS PROJECT UNIMPROVED NETWORK
PM PEAK HOUR TRAFFIC VOLUMES **FIGURE 7-15**



2010 PLUS PROJECT IMPROVED NETWORK
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 7-16

A comparison of these LOS estimates (Column 9) with the 2010 without project LOS estimates (Column 8) results in an estimate of the project impacts on the critical intersections. The estimate indicates that the addition of project traffic would degrade the LOS at the El Dorado Hills Boulevard and Harvard Way intersection from LOS E to LOS F, the Bass Lake Road and U. S. Highway 50 EB ramps intersection from LOS C to LOS F, and the Green Valley Road and Salmon Falls Road intersection from LOS A to LOS D. The Green Valley Road and Francisco Drive, Bass Lake Road and U. S. Highway 50 WB ramps, and El Dorado Hills Boulevard and U. S. Highway 50 EB ramps intersections would degrade to LOS F as they did in the 2010 without project condition.

The 2010 traffic condition with the project would result in significant impacts on the following major roadways and intersections.

o <u>El Dorado County Impacts</u>

- Green Valley Road between Francisco Drive and east of Bass Lake Road: LOS D and F. Traffic volumes are projected to be between 1,300 and 2,800 vehicles in the peak hour, which will exceed LOS C for a two-lane arterial.

- Green Valley Road and Francisco Drive: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A (V/C 0.47) to F (V/C 1.82)

- El Dorado Hills Boulevard and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from D to F (V/C 2.04).

- El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 2.36).

- Bass Lake Road and U. S. Highway 50 WB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.89).

- Bass Lake Road and U. S. Highway 50 EB ramps: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.38).

- El Dorado Hills Boulevard/Latrobe Road from Francisco Drive to south of the Business Park: LOS F. Traffic volumes are projected to be 3,000, 4,200, 6,000, 9,700

and 3,000 vehicles in the peak hour, which exceeds the capacity of the two- to four-lane sections of this arterial.

- Francisco Drive from El Dorado Hills Boulevard to Green Valley Road: LOS F. Traffic volumes are projected to be 1,700 vehicles in the peak hour, which exceeds the capacity of a two-lane arterial.

- Green Valley Road and Salmon Falls Road: LOS D. Traffic volumes are projected to exceed LOS C at the existing intersection. The LOS is expected to change from A to D (V/C 0.88).

- El Dorado Hills Boulevard and Harvard Way: LOS F. Traffic volumes are projected to exceed the capacity of the existing intersection. The LOS is expected to change from A to F (V/C 1.82).

o Areawide Impacts

- U. S. Highway 50 from east of Bass Lake Road to west of the county line: LOS F. Traffic volumes are projected to be between 9,200 and 15,500 vehicles in the peak hour, which will exceed the capacity of a four-lane freeway.

- White Rock Road from Latrobe Road to west of the county Line: LOS F. Traffic volumes are projected to be 4,100 vehicles in the peak hour, which will exceed the capacity of a two-lane roadway.

- Green Valley Road from Francisco Drive to west of the county line: LOS F. Traffic volumes are projected to be 4,800 vehicles in the peak hour, which will exceed the capacity of a two-lane arterial.

MITIGATION MEASURES

Mitigation Measures Incorporated by Project Design

The following project planned major roadway improvements are incorporated into the Specific Plan.

o Village Roads: Construct all roadways within each village as two-lane roadways with provision for left-turn pockets at intersections with arterial roadways.

o Ridge Road: Construct as a two-lane collector road from Country Club Drive to Silva Valley Parkway (10,000 LF/$1.6 million).

- Wilson Way Extension: Construct Wilson Way from El Dorado Hills Boulevard to Silva Valley Parkway as a two-lane arterial, except at El Dorado Hills Boulevard where it should be four lanes (6,000 LF/$1.0 million).

- Village Green Drive: Construct as a two-lane arterial from Silva Valley Parkway to Country Club Drive (1,800 LF/$0.3 million).

- Country Club Drive: Construct as a four-lane undivided arterial from Silva Valley Parkway to Bass Lake Road (15,800 LF/$3.6 million).

- ROW: Reservation of enough ROW width at all street-to-street intersections to accommodate a left-turn pocket and right-turn pocket for all arterial street approaches. The ROW width should be carried back 500 feet at all arterial-to-arterial intersections and 300 feet at arterial-to-minor street intersections. An evaluation of turn pocket (right or left) length would be determined with the filing of final tract maps for individual projects in the study area.

- White Rock Road: Widen to a four-lane undivided arterial from Latrobe Road to U. S. Highway 50 by 1997 (5,890 LF/$1.7 million).

- Latrobe Road: Widen to a six-lane divided arterial from White Rock Road to U. S. Highway 50 by 1997 (4,380 LF/$3.7 million).

- Silva Valley Parkway: Construct as a four-lane divided/undivided arterial from U. S. Highway 50 to Green Valley Road (20,000 LF/$4.9 million).

- Park and Ride Lot: Construct a park-and-ride lot on Silva Valley Parkway near U. S. Highway 50.

- Silva Valley Parkway Interchange: Construct new interchange on U. S. Highway 50 at Silva Valley Parkway by 1997 ($10.0 million). The Silva Valley overcrossing should be wide enough to accommodate four lanes. The interchange ramps should be as follows:

    - EB Off-ramp: One-lane ramp, widening to three lanes at Silva Valley Parkway.

    - EB On-ramp: Three lanes at the intersection with Silva Valley Parkway narrowing to a two-lane on-ramp to U. S. Highway 50.

    - A northbound to WB single-lane on-ramp loop.

    - A southbound to WB single-lane slip on-ramp.

- A WB off-ramp: Single-lane off the freeway flairing to three lanes at Silva Valley Parkway.

o El Dorado Hills Boulevard: Improve El Dorado Hills Boulevard/ Latrobe Road/U. S. Highway 50 interchange by 2007 ($4.0 million) to include:

  - Widening of the El Dorado Hills Boulevard/U. S. Highway 50 underpass to eight lanes.

  - Construction of a new EB to southbound off-ramp.

  - Widening of the existing WB off-ramp to accommodate three lanes at El Dorado Hills Boulevard

o Construct 10 traffic signals ($1.0 million)

Mitigation Measures Recommended by the EIR Consultant

o Existing Plus Project Condition: The following roadway facilities would need to be improved under the existing plus project condition. Figure 7-17 shows the estimated lane requirements in the study area under this condition.

o El Dorado County Improvements:

  - Green Valley Road: Widen to a four-lane undivided arterial between Francisco Drive and Silva Valley Parkway ($0.6 million).

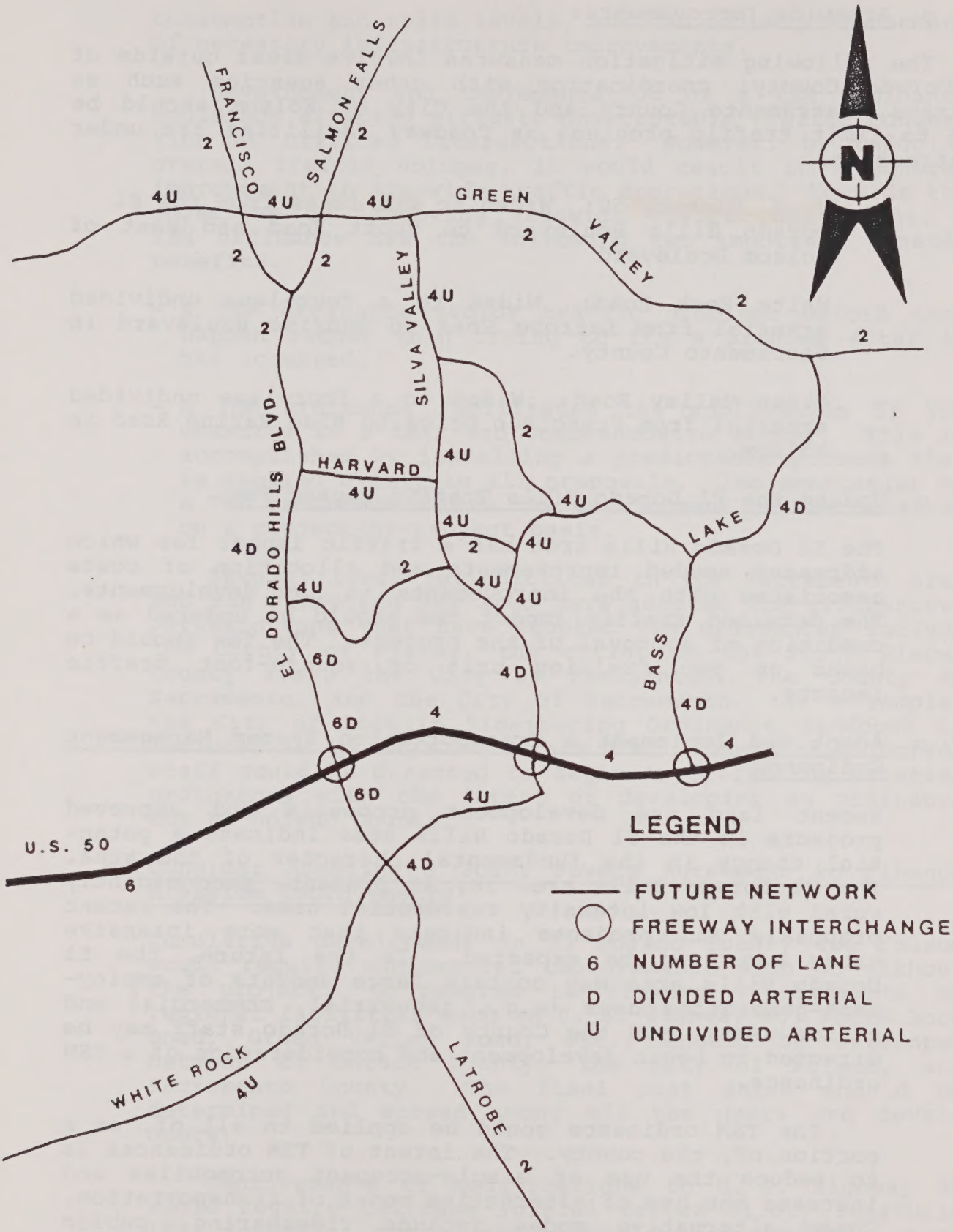
  - El Dorado Hills Blvd: Widen to a four-lane divided arterial from Wilson Way to Harvard Way by 1997 (4,000 LF/$1.2 million) and to a six-lane divided arterial from U. S. Highway 50 to Wilson Way by 1997 (6,000 LF/$3.2 million).

  - Green Valley Road and Francisco Drive: Add a right-turn lane on southbound Francisco Drive and a through lane on both Green Valley Road approaches 1997.

  - El Dorado Hills Boulevard and Harvard Way: Add a through lane on both El Dorado Hills Boulevard approaches by 1997.

  - El Dorado Hills Boulevard and U. S. Highway 50 WB Ramps: Add a new WB to southbound ramp by 1997.

  - Construct or upgrade five traffic signals by 1997 ($0.7 million).



EXISTING PLUS PROJECT
MITIGATED ROADWAY NETWORK

FIGURE 7-17

- Areawide Improvements:

The following mitigation measures involve areas outside of El Dorado County; coordination with other agencies such as Caltrans, Sacramento County and the City of Folsom should be done to limit traffic problems as roadway facilities are under construction.

- U. S. Highway 50: Widen to six lanes from the El Dorado Hills Boulevard to Scott Road and west of Folsom Boulevard

- White Rock Road: Widen to a four-lane undivided arterial from Latrobe Road to Sunrise Boulevard in Sacramento County.

- Green Valley Road: Widen to a four-lane undivided arterial from Francisco Drive to Blue Ravine Road in Folsom.

- Update the El Dorado Hills Traffic Impact Fee

The El Dorado Hills area has a traffic impact fee which addresses needed improvements and allocation of costs associated with the improvements to new developments. The detailed traffic impact fee should be updated as a condition of approval of the project. The fee should be based on per dwelling unit or square-foot traffic impacts.

- Adopt and Implement a Transportation System Management Ordinance

Recent land use development proposals and approved projects in the El Dorado Hills area indicate a potential change in the fundamental character of the area. The El Dorado Hills area is, at present, predominantly rural with low intensity residential uses. The recent proposals and projects indicate that more intensive urban uses can be expected. In the future, the El Dorado Hills area may contain large amounts of employment-generating uses (e.g., industrial, commercial and office uses), and the County of El Dorado staff may be directed to begin development and consideration of a TSM ordinance.

The TSM ordinance could be applied to all of, or a portion of, the county. The intent of TSM ordinances is to reduce the use of single-occupant automobiles and increase the use of alternative modes of transportation. These alternative modes include ridesharing, public transit, walking, and bicycles. In addition to reducing traffic congestion, implementation of TSM ordinances can have beneficial impacts on air quality, energy

consumption and noise levels, and can allow postponement of necessary infrastructure improvements.

Development and implementation of a TSM ordinance would not directly mitigate unacceptable traffic congestion at critical intersections. However, by reducing overall traffic volumes, it would result in a general improvement in areawide traffic operations. Towards the objective of improving areawide traffic operations, a TSM ordinance has the following two important general benefits.

- A TSM ordinance avoids traffic problems before they happen rather than trying to fix a problem after it has occurred.

- A TSM ordinance facilitates the application of TSM measures in a fair and comprehensive manner. This is accomplished by installing a predictable process that is applied evenly to all proposals. Implementation of a TSM ordinance avoids the development of TSM measures on a project-by-project basis.

Several local jurisdictions in the Sacramento area and San Francisco Bay area have adopted TSM ordinances. Jurisdictions that have adopted TSM ordinances include the County of Placer, the cities in the South Placer County area, the City of Pleasanton, the County of Sacramento, and the City of Sacramento. As a sample, the City of Rocklin Ridesharing Ordinance Handbook is included as Appendix F of this EIR. County of El Dorado staff could be directed to begin investigating existing ordinances with the intent of developing an ordinance for El Dorado County.

o <u>Consider Adopting a Joint Powers Agreement to Finance Areawide Improvements</u>

Cumulative development in El Dorado County and Folsom would require substantial improvements with or without the project. A program to finance improvements to regional facilities such as U. S. Highway 50, White Rock Road, Green Valley Road, etc., should be developed between El Dorado County, the City of Folsom, and Sacramento County. The final cost share should be determined and spread among all the users and developers.

Improvements or modifications to U. S. Highway 50 would require Caltrans initial review (i.e., feasibility, schedule, costs, etc.); review for possible state funding; preparation of a project study report; adoption of a cooperative agreement and memorandum of

understanding between Caltrans and the sponsoring agency; processing of the environmental clearance and project report; preparation of the final design and right-of-way clearances; processing of the final plans, specifications, and estimates for construction advertisement; and project construction. The overall process for projects on a state facility funded by agencies other than Caltrans can require 2-8 years to complete.

1997 Without Project Condition

The following are roadway facilities that would need to be improved under the 1997 without project condition. Figure 7-18 shows the estimated lane requirements for the major roadways in the study area under this condition.

- El Dorado County Improvements:

  - El Dorado Hills Boulevard/Latrobe Road: Widen to a four-lane undivided arterial south of White Rock Road to the end of the Business Park (3,000 LF/$10.7 million) and north of Park Drive to Francisco Drive (17,500 LF/$4.0 million). Widen to a six-lane divided arterial from White Rock Road to Park Drive (4,000 LF/$2.0 million).

  - Green Valley Road and Francisco Drive: Add a right-turn lane on southbound Francisco Drive and add a through lane on both Green Valley Road approaches.

  - El Dorado Hills Boulevard and U. S. Highway 50 WB Ramps: Add a second left-turn lane on the WB off-ramp ($0.1 million).

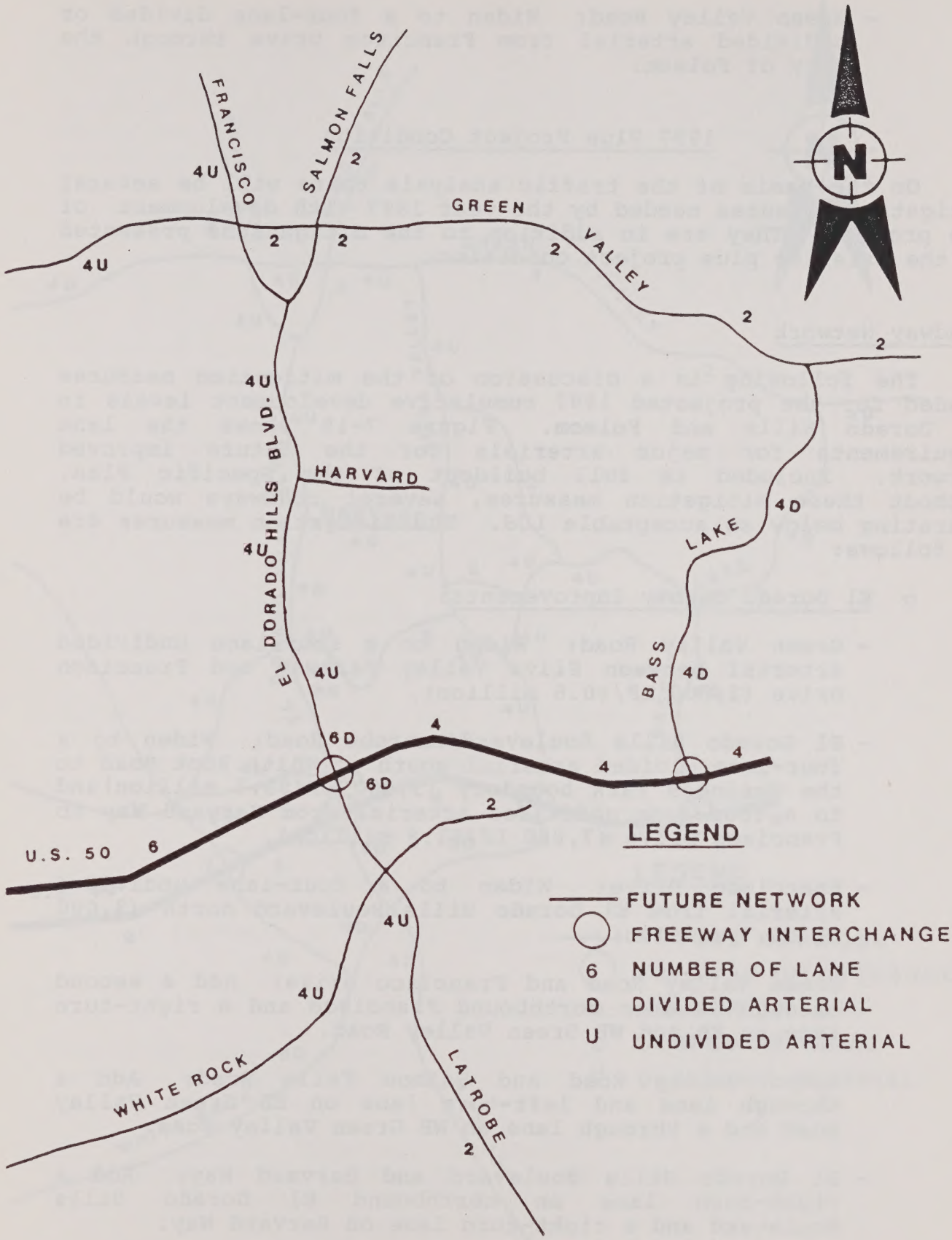
  - El Dorado Hills Boulevard and U. S. Highway 50 EB Ramps: Add a new EB to southbound off-ramp ($0.5 million).

  - Signalize all seven of the critical existing intersections identified in this study ($0.7 million).

- Areawide Improvements:

  - U. S. Highway 50: Widen to six lanes from El Dorado Hills Boulevard to Folsom Boulevard and to eight lanes west of Folsom Boulevard

  - White Rock Road: Widen to a four-lane undivided arterial from Latrobe Road to Sunrise Boulevard in Sacramento County.



1997 WITHOUT PROJECT
MITIGATED ROADWAY NETWORK

FIGURE 7-18

- Green Valley Road: Widen to a four-lane divided or undivided arterial from Francisco Drive through the City of Folsom.

1997 Plus Project Condition

On the basis of the traffic analysis there will be several mitigation measures needed by the year 1997 with development of the project. They are in addition to the mitigations presented in the existing plus project condition.

Roadway Network

The following is a discussion of the mitigation measures needed for the projected 1997 cumulative development levels in El Dorado Hills and Folsom. Figure 7-19 shows the lane requirements for major arterials for the future improved network. Included is full buildout of the Specific Plan. Without these mitigation measures, several roadways would be operating below an acceptable LOS. The mitigation measures are as follows:

o El Dorado County Improvements:

- Green Valley Road: Widen to a four-lane undivided arterial between Silva Valley Parkway and Francisco Drive (2,000 LF/$0.6 million),

- El Dorado Hills Boulevard/Latrobe Road: Widen to a four-lane divided arterial south of White Rock Road to the Business Park boundary (3,000 LF/$0.7 million)and to a four-lane undivided arterial from Harvard Way to Francisco Drive (7,800 LF/$1.8 million).

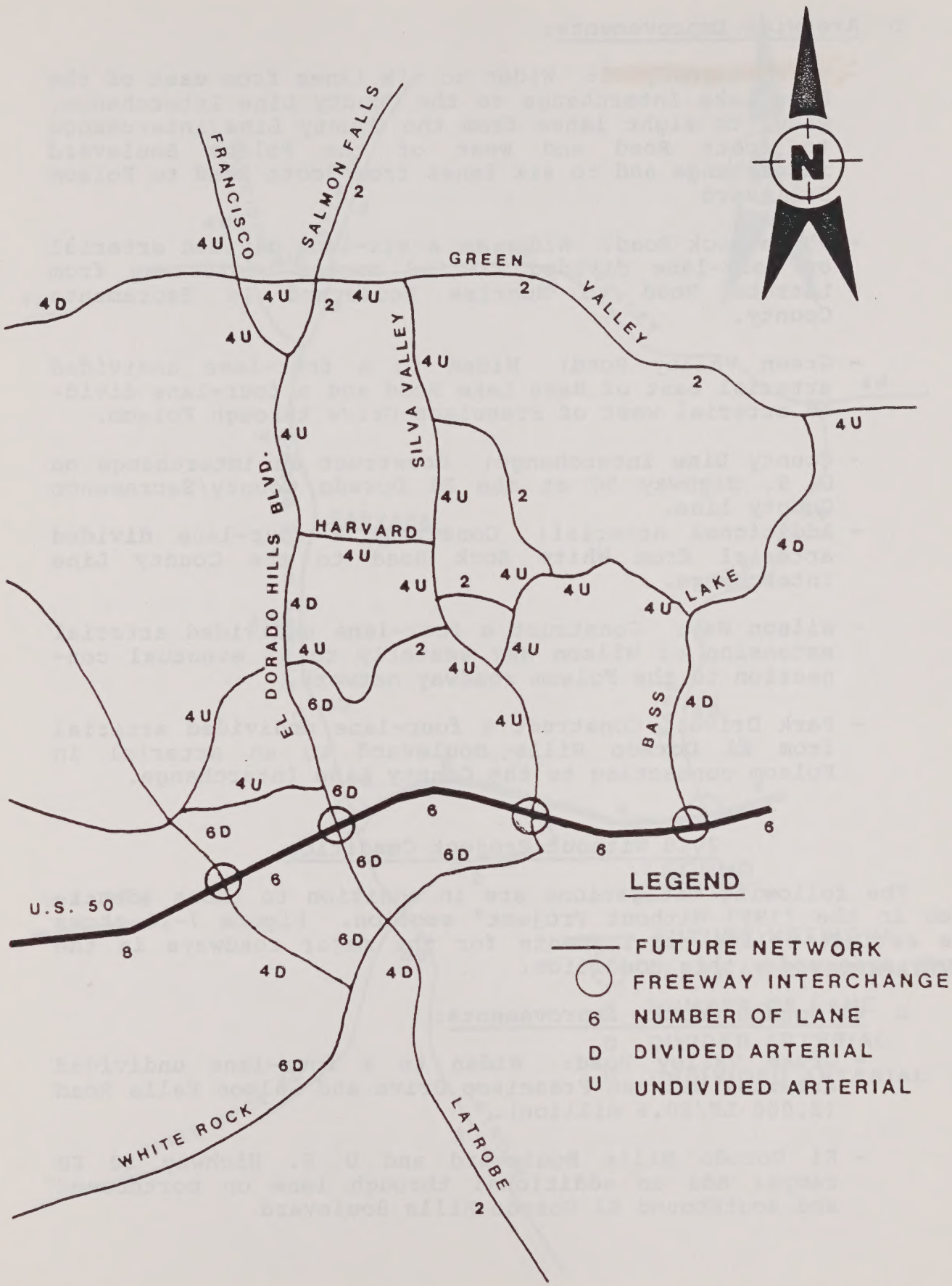
- Francisco Drive: Widen to a four-lane undivided arterial from El Dorado Hills Boulevard north (3,000 LF/$0.7 million).

- Green Valley Road and Francisco Drive: Add a second through lane on northbound Francisco and a right-turn lane on EB and WB Green Valley Road.

- Green Valley Road and Salmon Falls Road: Add a through lane and left-turn lane on EB Green Valley Road and a through lane on WB Green Valley Road.

- El Dorado Hills Boulevard and Harvard Way: Add a right-turn lane on northbound El Dorado Hills Boulevard and a right-turn lane on Harvard Way.

- Signalize all 15 of the critical intersections identified in the study ($1.5 million).



1997 PLUS PROJECT
MITIGATED ROADWAY NETWORK

FIGURE 7-19

- Areawide Improvements:

  - U. S. Highway 50: Widen to six lanes from east of the Bass Lake Interchange to the County Line Interchange, widen to eight lanes from the County Line interchange to Scott Road and west of the Folsom Boulevard interchange and to six lanes from Scott Road to Folsom Boulevard

  - White Rock Road: Widen to a six-lane divided arterial or four-lane divided limited access expressway from Latrobe Road to Sunrise Boulevard in Sacramento County.

  - Green Valley Road: Widen to a four-lane undivided arterial east of Bass Lake Road and a four-lane divided arterial west of Francisco Drive through Folsom.

  - County Line Interchange: Construct an interchange on U. S. Highway 50 at the El Dorado County/Sacramento County line.
  - Additional Arterial: Construct a four-lane divided arterial from White Rock Road to the County Line Interchange.

  - Wilson Way: Construct a four-lane undivided arterial extension of Wilson Way westerly to an eventual connection to the Folsom roadway network.

  - Park Drive: Construct a four-lane undivided arterial from El Dorado Hills Boulevard to an arterial in Folsom connecting to the County Line Interchange.

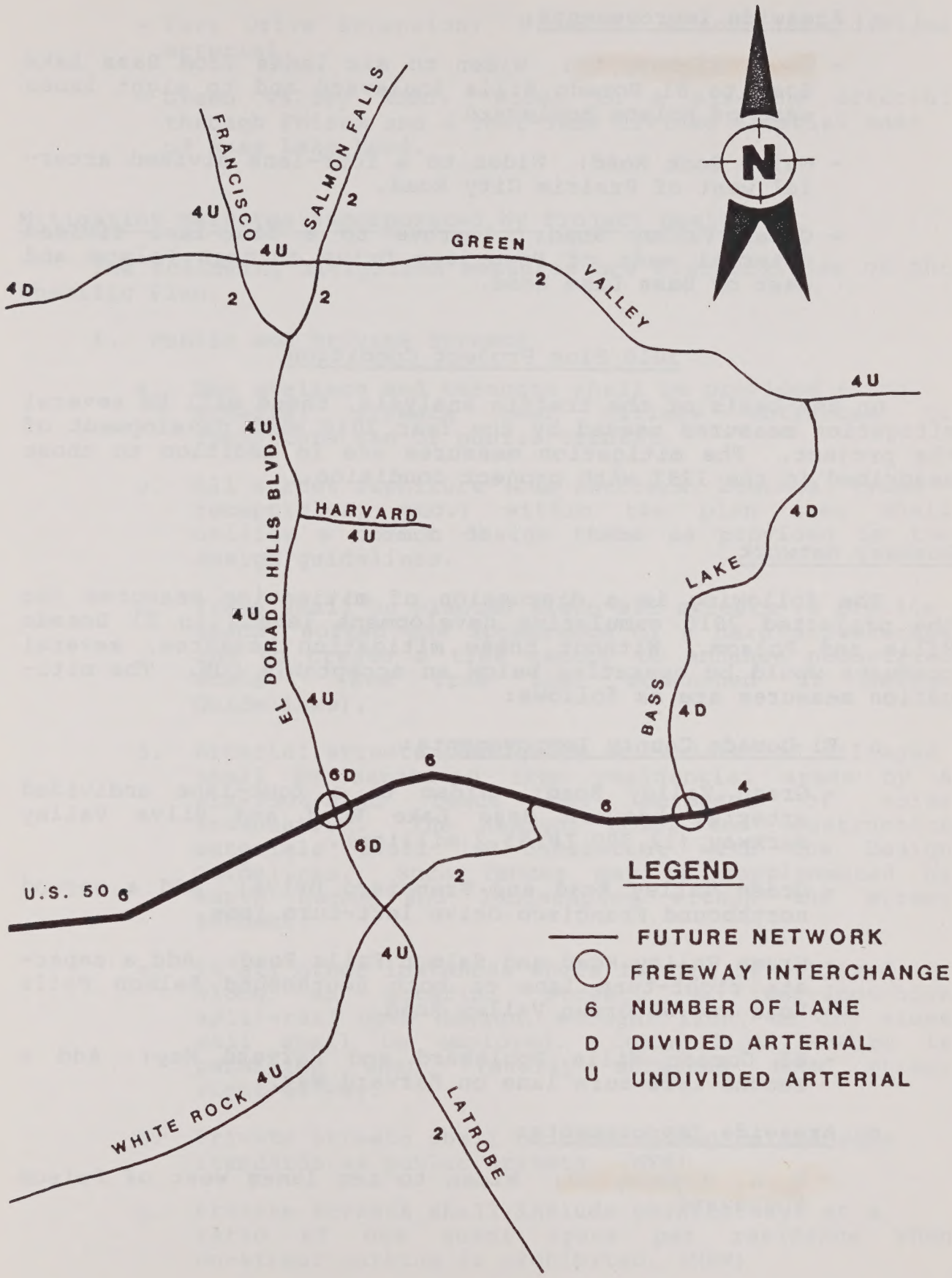
2010 Without Project Condition

The following mitigations are in addition to those identified in the "1997 Without Project" section. Figure 7-20 shows the estimated lane requirements for the major roadways in the study area under this condition.

- El Dorado County Improvements:

  - Green Valley Road: Widen to a four-lane undivided arterial between Francisco Drive and Salmon Falls Road (2,000 LF/$0.6 million).

  - El Dorado Hills Boulevard and U. S. Highway 50 EB ramps: Add an additional through lane on northbound and southbound El Dorado Hills Boulevard



2010 WITHOUT PROJECT MITIGATED ROADWAY NETWORK

FIGURE 7-20

- Areawide Improvements:

  - U. S. Highway 50: Widen to six lanes from Bass Lake Road to El Dorado Hills Boulevard and to eight lanes east of Folsom Boulevard

  - White Rock Road: Widen to a four-lane divided arterial west of Prairie City Road.

  - Green Valley Road: Improve to a four-lane divided arterial west of Francisco Drive through Folsom and east of Bass Lake Road.

2010 Plus Project Condition

On the basis of the traffic analysis, there will be several mitigation measures needed by the Year 2010 with development of the project. The mitigation measures are in addition to those described in the 1997 with project condition.

Roadway Network

The following is a discussion of mitigation measures for the projected 2010 cumulative development levels in El Dorado Hills and Folsom. Without these mitigation measures, several roadways would be operating below an acceptable LOS. The mitigation measures are as follows:

- El Dorado County Improvements:

  - Green Valley Road: Widen to a four-lane undivided arterial between Bass Lake Road and Silva Valley Parkway (22,500 LF/$5.2 million).

  - Green Valley Road and Francisco Drive: Add a second northbound Francisco Drive left-turn lane.

  - Green Valley Road and Salmon Falls Road: Add a separate right-turn lane on both southbound Salmon Falls Road and WB Green Valley Road.

  - El Dorado Hills Boulevard and Harvard Way: Add a second left-turn lane on Harvard Way.

- Areawide Improvements:

  - U. S. Highway 50: Widen to ten lanes west of Folsom Boulevard

- Park Drive Extension: Widen to a four-lane divided arterial.

- Green Valley Road: Widen to a six-lane arterial through Folsom and a four-lane divided arterial east of Bass Lake Road.

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

1. Public and Private Streets

a. Bus shelters and turnouts shall be provided along arterial streets near village entrances to facilitate use of public transit.

b. All street furniture (bus shelters, benches, trash recepticles, etc.) within the plan area shall utilize a common design theme as provided in the design guidelines.

c. Trees shall be planted along all streets to provide shade, soften the appearance of a hard streetscape and to create a tree canopy to enhance pedestrian scale. (See Tree List contained in Design Guidelines).

d. Arterial streets contiguous to residential villages shall be separated from residential areas by a six-foot-high fence for purposes of noise attenuation. The design, color and construction materials shall be consistent with the Design Guidelines. Such fences may be supplemented by earth berms and landscaping within the street setback.

e. In all other instances where fencing is utilized along an arterial street, a four-foot-high split-rail open design, wrought iron, or dry stone wall shall be employed. Chain link fencing is permitted when visually screened from street right-of-way.

f. Private streets shall be constructed to the same standards as public streets. (NEW)

g. Private streets shall include parking bays at a ratio of one guest space per residence when on-street parking is prohibited. (NEW)

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to traffic are included in Appendix I.

Chapter 8
Air Quality

Setting

The Plan Area is within the Sierra Nevada foothills on the eastern edge of the Sacramento Valley. A sea level gap in the Coast Ranges, the Carquinez Strait, is located 60 miles southwest, and the intervening terrain is very flat. The prevailing wind direction is southwesterly, resulting from marine breezes through the Carquinez Strait. During winter, when the sea breeze diminishes, northerly winds occur more frequently, but southerly winds still predominate. At night-time, especially in fall and winter, drainage winds that follow watercourses dominate.

The federal Clean Air Act of 1970 established air quality standards for several pollutants. These standards are divided into primary standards which are designed to protect the public health, and secondary standards which are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. In addition, the State of California has adopted its own standards.

The Plan Area is within the Mountain Counties Air Basin. The Plan Area is adjacent to the western boundary of El Dorado County, and therefore lies at the boundary of the Mountain Counties Air Basin and the Sacramento Valley Air Basin. The county line also marks the eastern boundary of the Sacramento Air Quality Maintenance Area.

Currently, the only air quality monitoring site within El Dorado County is Placerville, located about 15 miles east of the Plan Area. In neighboring Sacramento County, the Sacramento Air Pollution Control District operates a partial monitoring site in Folsom, about 5 miles west of the Plan Area. The state Air Resources Board (ARB) operates a complete monitoring site in Citrus Heights, about 12 miles west of the Plan Area. Table 8-1 shows data from these monitoring sites for the year 1985.

Pursuant to Clean Air Act requirements, all areas in California have been classified as to their attainment status with regard to the National Ambient Air Quality Standards. El Dorado County is a rural nonattainment area for ozone, and either an attainment area or unclassified for other pollutants. This classification indicates that the region exceeds the ozone standard primarily because of transport of pollutants into the area from upwind urban areas; in this case, from Sacramento and the greater Bay Area.

Table 8-1. Summary of Air Quality Data: 1985

Pollutant	Standard	No. of Days Exceeding Standard at: Placerville	Folsom	Citrus Heights
Ozone	State 1-Hour	N.A.	41	27
	Federal 1-Hour	N.A.	13	10
Carbon Monoxide	Federal 1-Hour	N.A.	N.A.	0
	Federal 8-Hour	N.A.	N.A.	0
Nitrogen Dioxide	State 1-Hour	N.A.	N.A.	0
Suspended Particulate (TSP)[a]	Federal 24-Hour	N.A.	N.A.	0
Suspended Particulate (PM10)[a]	State 24-Hour	0	N.A.	10

Source: California Air Resources Board 1986.

N.A. = Not Available

[a] Samples are taken every sixth day.

Within the adjacent Sacramento Air Quality Maintenance Area (AQMA), the national ambient air quality standards for ozone, carbon monoxide, and total suspended particulates are exceeded.

In 1977, the U.S. Environmental Protection Agency (EPA) designated the Sacramento AQMA as a nonattainment area for these pollutants. The 1977 federal Clean Air Act requires that regional plans be prepared for nonattainment areas showing how the federal standards are going to be attained by 1987. The Sacramento Area Council of Governments (SACOG) and member government agencies have prepared programs designed to reduce emissions in the region through stationary source controls, transportation control measures, and mobile source controls.

Impacts

Two conditions were analyzed to determine air quality impacts: Existing Conditions and 2010 Condition.

Existing Conditions

Construction. Construction air quality impacts would be due to equipment and vehicle exhaust emissions and dust generated by equipment and vehicles. Exhaust emissions from vehicles and equipment are normally small in quantity, of short duration, and are of little significance. Another construction activity that generates pollutants is paving. During paving, small amounts of hydrocarbons and particulate matter, as well as some odors, are emitted by the paving material.

Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earthmoving activities comprise the major source of construction dust emissions, but traffic and general disturbance of the soil also generate substantial dust emissions. Dust generation is dependent on soil type and soil moisture.

The amount and location of construction dust would vary over the period of buildout of the proposed project. During phased construction on the site, it is probable that construction activities would occasionally occur adjacent to existing neighboring residences or previously completed residences within the Plan Area. The effects of construction activities would be increased dustfall and locally elevated levels of total suspended particulates. Dustfall could be a nuisance at neighboring properties where it would soil exposed surfaces, requiring more frequent washing during construction. Because southerly and westerly winds predominate during the spring and summer months, the greatest dust impact would occur in areas northeast of construction activity. Construction dust impacts would be potentially significant, although temporary in nature. To

reduce to a less-than-significant level, the developers should implement dust-reducing construction practices.

Direct and Indirect Emissions. The proposed project, being residential and commercial in nature, would only be a minor direct source of pollutants. Space and water heating emissions, paints, lawnmowers, and solvent use are some common residential and commercial emission sources. Emissions from wood stoves and fireplaces would be the most substantial direct sources within the project. These emissions have been estimated based upon per-dwelling emission factors developed by the ARB (California Air Resources Board 1982), and are shown in Table 8-2.

The implementation of the Specific Plan would create an indirect source of air pollutants, in that it would generate and attract new automobile traffic that would cause an increase in local and regional air pollutant concentrations. The URBEMIS emissions model, used to estimate regional emissions, was applied to the proposed land uses within the Plan Area (California Air Resources Board 1983). The estimated increase in regional emissions because of project traffic is shown in Table 8-2.

Local Air Quality Effects. Wood smoke from residential stoves and fireplaces has the potential to reduce visibility and cause locally elevated concentrations of particulates. The relatively low net residential density within the Plan Area (1.8 dwelling units per acre), the relatively large amount of open space, and the complex terrain of the area, are all factors that reduce the potential for wood smoke problems. The effect of wood smoke on visibility and local particulate concentrations is considered less than significant.

On a local scale, the most significant pollutant generated by the project would be carbon monoxide released by project-related auto traffic. Carbon monoxide is an odorless, colorless, poisonous gas that is a health concern because it combines readily with hemoglobin in the blood, reducing the amount of oxygen in the bloodstream. Carbon monoxide air quality problems are normally a local problem near areas of heavy auto traffic and congestion. Typically, the atmospheric conditions associated with elevated carbon monoxide levels (calm winds, ground-based inversion) occur during the winter months. Concentrations of this carbon monoxide have been predicted under worst-case assumptions for traffic and meteorology, with and without the proposed project, and with roadway and intersection improvements identified by TJKM Transportation Consultants as necessary to maintain an LOS C within and near the Plan Area.

The CALINE-3 computer dispersion model was applied to five intersections and interchanges. The criteria for selection of an intersection or interchange for analysis was maximum traffic volume and/or congestion, or proximity to a sensitive receptor such as a school. Because these locations are a focus of

Table 8-2. Project-Generated Direct and Indirect Emissions

Pollutant	Direct Emission (tons/yr)	Indirect Emission (tons/yr)	Project Total (tons/yr)	County Total[a,b] (tons/yr)
Carbon Monoxide	115	2,638	2,753	21,170
Hydrocarbons	30	307	337	6,570
Nitrogen Oxides	6	154	160	3,175
Particulates	19	333	352	9,125

[a] Source: Withycombe pers. comm. 1987.
Donald Ballanti 1987.

[b] Emissions shown are for the Mountain Counties Air Basin portion of El Dorado County, which does not include the Lake Tahoe Basin.

traffic and congestion, predicted concentrations should represent the highest occurring in the vicinity. The methodology and assumptions used in estimating carbon monoxide concentrations are described in Appendix H. Estimated worst-case carbon monoxide concentrations are shown in Table 8-3.

The predicted concentrations in Table 8-3 are to be compared to the state and federal standards. The state standard for the 1-hour period is 20 parts per million (ppm); the federal standard is 35 ppm. Table 8-3 shows that predicted 1-hour concentrations are below the most stringent 1-hour standards at all locations for existing conditions and in the future with or without the project. The effect of project traffic would be to increase carbon monoxide levels by as much as 5 ppm, but since concentrations would remain below state and federal standards this impact is considered less than significant.

The state and federal 8-hour standards for carbon monoxide are both 9.0 ppm. Predicted concentrations would remain below these standards under existing conditions and in the future with or without the project. The project would increase carbon monoxide concentrations by as much as 3.4 ppm, but since concentrations would remain below the state and federal standards this impact is considered less than significant.

Regional Effects on Air Quality. The regional increases in emissions shown above in Table 8-2 would cause a deterioration in regional air quality. The most significant of these emissions would be that of reactive hydrocarbons and oxides of nitrogen, two ozone precursors. Project-related emissions represent about a 5 percent increase in El Dorado County emissions for hydrocarbon and oxides of nitrogen emissions. Increases of this magnitude are significant, and would increase ozone concentrations downwind. However, ozone concentrations in El Dorado County are primarily the result of emissions occurring elsewhere upwind, and are only partially determined by emissions from within El Dorado County. In a sparsely developed rural county such as El Dorado County, a 5 percent increase in county-wide emission of ozone precursors would not result in a measurable increase in ozone levels. Nevertheless, given the severity of the ozone problem in the region, the increase in ozone precursor emissions caused by the proposed project would be considered a significant unavoidable impact. To reduce this impact, but not to a less-than-significant level, the county should adopt a Transportation System Management ordinance as detailed in Chapter 7, "Transportation."

A large proportion of the vehicle trips generated by the proposed project would be directed toward Sacramento and other areas to the west. Although the Plan Area is not located within the Sacramento AQMA, a substantial portion of the project-generated vehicle travel would occur within the Sacramento AQMA. The latest projections of ozone levels within the Sacramento

Table 8-3. Predicted Worst-Case Carbon Monoxide Concentrations (Parts Per Million)

Location	1-Hour Concentration			8-Hour Concentration		
	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
El Dorado Hills and U. S. Highway 50	8.3	12.4	11.4	5.6	8.3	7.7
Green Valley and Francisco	8.3	12.7	10.7	5.6	8.5	7.1
Silva Valley and Harvard	---	8.5	8.5	---	8.3	8.3
Silva Valley and Country Club	---	10.1	10.1	---	6.8	6.8
El Dorado Hills and Harvard	7.7	12.8	10.6	5.2	8.6	7.1

Case 1: Existing Conditions

Case 2: Existing Conditions plus Project

Case 3: Existing Conditions plus Project with Mitigation Measures included in Chapter 7, "Transportation."

Source: Donald Ballanti 1987.

Note: State standard for the 1-hour period is 20 ppm; the federal standard is 35 ppm. State and federal 8-hour standards are 9 ppm.

AQMA indicate a general reduction in ozone levels through 1989 (Sacramento Area Council of Governments 1986). This reduction is due to improved controls on both stationary source and motor vehicle emissions of hydrocarbons and oxides of nitrogen. Despite the predicted improvements, continued violation of federal and state ozone standards is predicted beyond 1987, with ozone levels increasing after 1990.

Attainment of the ozone standard in the Sacramento AQMA would require that hydrocarbon emissions be reduced to below current levels. The proposed project, and cumulative growth in the region, would delay or prevent attainment of the ozone standard. More stringent controls on stationary and mobile sources would be necessary to offset project and cumulative emission increases. The effect of project emissions on the Sacramento AQMA is considered significant. To reduce to a less-than-significant level, the county should adopt a Transportation System Management ordinance.

2010 Plus Project Condition

The 2010 condition is an estimate of the air quality impacts that would result from cumulative development in the year 2010 without the project, with the project, and with the project and the transportation mitigation measures recommended in Chapter 7, "Transportation."

Local Air Quality Effects. The effects of cumulative traffic growth on local carbon monoxide concentrations have been estimated using the CALINE-3 computer dispersion model (See Appendix H). Predicted worst-case concentrations at five intersections and interchanges are shown in Table 8-4. Three cases are analyzed: 2010 without the project condition, 2010 plus project condition, and 2010 plus project with recommended road way, intersection, and interchange mitigations.

The predicted concentrations in Table 8-4 are to be compared to state and federal standards. The state standard for the 1-hour period is 20 ppm; the federal standard is 35 ppm. Table 8-4 shows that predicted 1-hour concentrations are below the most stringent 1-hour standards at all locations for cumulative growth scenarios.

The state and federal 8-hour standards for carbon monoxide are both 9.0 ppm. Potential violations of the 8-hour state and federal standards are shown near the Green Valley and Francisco intersection and the El Dorado Hills Boulevard and Harvard intersection in the year 2010 if the project were built and needed mitigation improvements not completed. This impact is considered potentially significant. To reduce to a less-than-significant level, the transportation improvements identified in Chapter 7, "Transportation," would need to be constructed.

Table 8-4. Predicted Worst-Case Carbon Monoxide Concentrations with Cumulative Growth (Parts Per Million)

Location	1-Hour Concentration			8-Hour Concentration		
	Case 1	Case 2	Case 3	Case 1	Case 2	Case 3
El Dorado Hills and U. S. Highway 50	10.8	13.3	11.9	7.2	8.9	8.0
Green Valley and Francisco	13.8	15.4	12.3	7.1	10.3[a]	8.3
Silva Valley and Harvard	---	8.3	8.3	---	5.6	5.6
Silva Valley and Country Club	---	9.6	9.6	---	6.4	6.4
El Dorado Hills and Harvard	10.6	15.2	11.1	7.1	10.1[a]	7.6

Case 1: 2010 Without Project Condition

Case 2: 2010 Plus Project Condition

Case 3: 2010 Plus Project Condition With Mitigation Measures included in Chapter 7, "Transportation."

Source: Donald Ballanti 1987.

Note: State standard for the 1-hour period is 20 ppm; the federal standard is 35 ppm. State and federal 8-hour standards are 9 ppm.

[a] Violation of state and federal standards.

Regional Effects on Air Quality. Projections of cumulative development in El Dorado County and Folsom indicate that by the year 2010 a substantial amount of residential, commercial, and industrial development would occur in addition to the project. The regional emissions generated by these land uses and associated vehicle travel would exceed those associated with the proposed project by more than a factor of 2. The combined emissions of the project and cumulative growth in the region would delay or prevent attainment of the ozone standard and would require more stringent controls on stationary and mobile sources to offset the cumulative increases. The effect of cumulative emissions on the Sacramento AQMA is considered significant and unavoidable. County adoption and implementation of a Transportation System Management ordinance would help to reduce this impact, but not to a less-than-significant level.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are listed as Plan Policies in the Specific Plan.

Commercial Land Use

1. General

b. Each commercial area shall be accessible from at least one major collector or arterial road with sufficient design capacity to accommodate traffic generated by the businesses, as well as other local traffic.

c. The commercial areas should be directly accessible by public transportation, pedestrian, and bicycle routes.

Circulation:

1. Public and Private Streets

a. Bus shelters and turnouts shall be provided along arterial streets near village entrances to facilitate use of public transit.

Beyond these specific policies, the proposed project incorporates a mixture of residential, commercial, and community service land uses within short travel distances, linked by pedestrian paths, bicycle paths, and bike lanes along major arterials. This mixture of land uses generates numerous internal trips that, because of the relatively short travel distance

and alternative mode circulation system, could result in a reduction in auto trip generation rates.

The Specific Plan includes a Park and Ride lot near the Silva Valley/U. S. Highway 50 interchange to supplement the existing Park and Ride facility at the El Dorado Hills Boulevard/U. S. Highway 50 interchange. These facilities would reduce commute travel to Sacramento.

Mitigation Measures Recommended by the EIR Consultant

Existing Conditions

Implement Planned and Recommended Transportation Improvements. No mitigation is required for localized air quality impacts. However, the planned and suggested roadway improvements described in Chapter 7, "Transportation," would tend to reduce localized air quality impacts.

Adopt and Implement a Transportation System Management Ordinance. Air quality impacts involving regional pollution problems would not be mitigated to a less-than-significant level by the roadway improvements described in Chapter 7, "Transportation." Adoption and implementation of a Transportation System Management ordinance would reduce the magnitude of emission increases, but they would remain significant.

Implement Dust-Reducing Construction Practices. Dust emissions related to construction can be reduced by as much as 50 percent by watering exposed earth surfaces during clearing, grading, earthmoving, and other site preparation work. Conditions of approval should include a provision that all construction contracts require frequent watering and daily cleanup of mud and dirt carried out from the construction site onto adjacent streets. Upon completion of site preparation activities paving, planting, use of soil binders or repeated soaking to maintain a crusty surface should be implemented to reduce wind-blown dust potential.

2010 Plus Project Condition

Implement Planned and Recommended Transportation Improvements. Chapter 7, "Transportation," describes a variety of roadway improvements which would be needed to mitigate local air quality impacts to a less-than-signifcant level.

Adopt and Implement a Transportation System Management Ordinance. Air quality impacts involving regional pollution problems would not be mitigated to a less-than-significant level by either the roadway improvements described in Chapter 7, "Transportation," or adoption of a Transportation System

Management ordinance. Adoption of such an ordinance would, however, minimize impacts.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to air quality are included in Appendix I.

Chapter 9
Noise

This chapter is based on a report prepared by Brown-Buntin Associates (BBA), Inc.

Setting

Criteria for Acceptable Noise Exposures

The El Dorado County Noise Element of the General Plan (El Dorado County 1976) has established "Desired Maximum Levels in Land Use Areas" for stationary noise sources applicable to several land use classifications. These standards have been interpreted as median (L50) or Equivalent Energy Levels (Leq) and are summarized in Table 9-1.

The U. S. Housing and Urban Development (HUD) Environmental Criteria and Standards (24 Codified Federal Regulations Part 51) are referenced in the Noise Element and have generally been applied to noise-sensitive land uses potentially impacted by transportation related noise sources (roadway, rail, and aircraft noise) that are preempted from local control. The current HUD standards establish the degree of noise acceptability in terms of the day/night average noise level (Ldn) in exterior areas of noise sensitive land uses. The HUD standards are summarized below:

- Acceptable: Ldn does not exceed 65 dB.
- Normally Unacceptable: Ldn exceeds 65 dB, but is less than 75 dB.
- Unacceptable: Ldn exceeds 75 dB.

The HUD "goal" for interior noise levels is 45 dB Ldn or below. According to the HUD standards, the interior noise environment is considered acceptable if the exterior noise environment complies with the standard and the building is constructed in a manner common to the area.

It is important to note that common construction is intended by the standards to mean that open windows are required for ventilation. The HUD standard allows for building design and construction techniques which provide greater noise attenuation than common construction in areas where exterior noise levels

Table 9-1. Stationary Source Noise Level Standards

Land Use Classifications	Maximum Allowable Level L50 or Leq dBA
Residential: rural-suburban	
10 p.m. to 7 a.m.	40
7 a.m. to 10 p.m.	45-50
Residential: suburban	
10 p.m. to 7 a.m.	40
7 a.m. to 10 p.m.	50-55
Residential: low density, urban	
10 p.m. to 7 a.m.	50
7 a.m. to 10 p.m.	55-60
Residential: medium, high density	
10 p.m. to 7 a.m.	55
7 a.m. to 10 p.m.	60
Commercial zones: districts	
10 p.m. to 7 a.m.	60
7 a.m. to 10 p.m.	65
Industrial zones: districts	
24 hours	70-75

Source: El Dorado County Noise Element of the General Plan 1976.

are "Normally Unacceptable," provided that interior noise levels do not exceed 45 dB Ldn.

The El Dorado County Airport Land Use Commission (ALUC) has established land use policies relating to aircraft noise impacts. According to staff of the El Dorado County Planning Department, the ALUC policies would not, strictly speaking, be applicable to noise from aircraft originating at Mather Air Force Base, since the ALUC has no jurisdiction over a military air base located in Sacramento County (Dunn pers. comm.). However, the ALUC policies are described below since they are consistent with the standards commonly used by many local jurisdictions for control of land uses potentially impacted by aircraft noise.

- Community Noise Equivalent Level (CNEL) 55-65 dB: All residential uses should utilize mitigation measures such as aviation easements, soundproofing, etc. Energy conservation requirements for new construction are considered adequate to provide acceptable interior noise levels within single-family dwellings.

- CNEL 60-65 dB: California Administrative Code Title 24 provisions (see description below) apply to multiple-family dwellings, motels, and hotels exposed to aircraft noise levels within this range.

- CNEL greater than 65 dB: Residential land uses are normally not acceptable.

Title 24 of the California Administrative Code requires an acoustical analysis for multi-family dwellings, hotels, and motels located within the 60-dB Ldn (or CNEL) contours identified in the local noise element. A maximum allowable interior noise level of 45 dB Ldn (or CNEL) is specified for habitable rooms by Section 2-3501 or this code, and the requirements for an acoustical analysis are outlined.

Ambient Noise Levels

The Plan Area is potentially affected by noise from aircraft operating at Mather Air Force Base and by traffic noise on U. S. Highway 50 and major local streets in the area. Noise from these sources was evaluated by a combination of literature search, noise measurements near and within the Plan Area, and analytical modeling techniques.

Noise surveys were conducted in the vicinity of and within the Plan Area on March 17, 1987 and March 29 - April 3, 1987. The purpose of the surveys was to measure traffic noise levels, ambient noise levels away from the influence of roadway noise, and single event noise levels due to overflights of aircraft from Mather Air Force Base. Instrumentation used included a

Bruel & Kjaer (B&K) Type 2218 precision integrating sound level meter equipped with a B&K Type 4165 1/2" microphone and a Metrosonics dB604 sound level analyzer equipped with a B&K Type 4176 1/2" microphone. Both measurement systems were calibrated in the field with a B&K Type 4230 acoustical calibrator, and comply with the specifications of the American National Standards Institute (ANSI) and the International Electrotechnical Commission (IEC) for Type I sound level meters.

Ambient Noise Levels. An ambient noise level monitoring site was selected in the rear yard of 3603 Ridge View Drive located about 0.25 mile west of the Plan Area. Hourly noise levels were recorded from March 28 through April 3, 1987. The Ldn ranged from about 52-59 dB at this location. Identifiable noise sources included distant traffic, aircraft overflights, dogs, and birds.

Aircraft Noise Levels. The Air Installation Compatible Use Zone (AICUZ) Report for Mather Air Force Base indicates that the Plan Area lies outside the 65-dB CNEL noise exposure contour. However, the site is commonly overflown by aircraft conducting training exercises from the base, as shown by the flight track map from the AICUZ Report. Military aircraft observed flying over the site included KC-135s, B-52s, T-37s, T-38s, and T-43s. Noise levels from these aircraft and possibly others which were recorded at the above-described ambient noise level monitoring station commonly exceeded 80 dB sound exposure level (SEL) with some events exceeding 90 dB SEL. As shown by Figure 9-1, the number of single events attributable to aircraft that exceeded the threshold of the sound level meter (65 dBA) did not surpass six per hour during the sampling period. The greatest number of noise events occurred from 9:00 a.m. to noon and from 3:00 p.m. to 6:00 p.m., with little or no activity recorded from 7:00 p.m. to 8:00 a.m. Measured CNEL values during this period ranged from 48.3 dB to 58.7 dB.

A heliport has been proposed in the El Dorado Hills Business Park. Analysis of potential helicopter operations from the heliport (Brown-Buntin Associates, Inc. 1985) indicates that noise levels within the Plan Area would be within acceptable limits as defined by Federal Aviation Administration guidelines and by judging the potential for speech and sleep interference.

Traffic Noise Levels. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used for the prediction of traffic noise levels. The FHWA model is the analytical method currently favored by most state and local agencies, including Caltrans, for traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

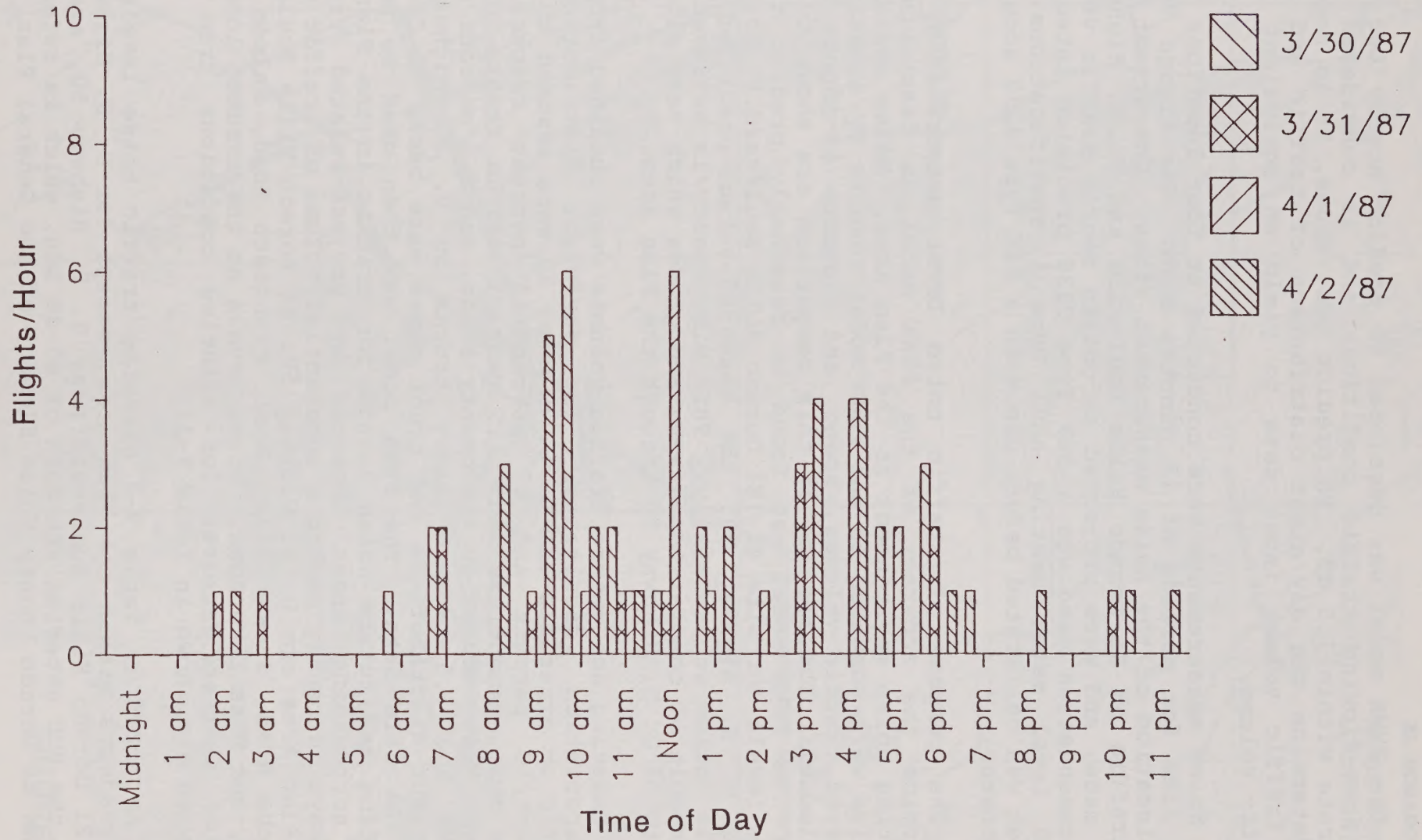


FIGURE 9-1. FREQUENCY OF AIRCRAFT OVERFLIGHTS
EL DORADO ESTATES

BBA

The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions and is considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Noise measurements were conducted at four locations in the Plan Area for periods of 15 minutes each. See Figure 9-2 for the location of the noise measurement sites. Concurrent counts of traffic on El Dorado Hills Boulevard and U. S. Highway 50 were made, and were projected to obtain hourly traffic volumes. Instrumentation used was a B&K Type 2230 precision integrating sound level meter meeting ANSI Type 1 specifications. The system was calibrated before use with a B&K Type 4230 acoustical calibrator.

The purpose of traffic noise level measurements is to determine the accuracy of the FHWA model in describing the existing noise environment at the Plan Area. Noise measurement results were compared to the FHWA model results by entering the observed traffic volumes, speed, and distance as inputs to the FHWA model. The results of this comparison are shown in Table 9-2. The FHWA model was found to reasonably predict traffic noise levels for Site #1 (El Dorado Hills Boulevard.) For sites along U. S. Highway 50, the measured-versus-predicted noise levels varied substantially. This discrepancy is believed to be the result of complex topography and grades which vary along the length of U. S. Highway 50 through the Plan Area.

Existing and future traffic volumes were obtained from TJKM Transportation Consultants. The day/night distributions of traffic on arterials and U. S. Highway 50 were assumed to be 90 percent/10 percent and 87 percent/13 percent respectively. Truck mix assumptions were 2.5 percent medium trucks and 1.0 percent heavy trucks on the county roads, and 2.5 percent medium trucks and 3.5 percent heavy trucks on U. S. Highway 50. Day/night distributions and truck mixes were based on Caltrans and BBA file data. The FHWA model was then used to predict existing and future noise levels for traffic in the Plan Area and surrounding areas impacted by project-related traffic. Roadways currently having a substantial volume of traffic within the Plan Area are U. S. Highway 50, El Dorado Hills Boulevard, Latrobe Road, Green Valley Road, Francisco Road, Salmon Falls Road, and Bass Lake Road. Noise levels at the assumed locations of the nearest receiver for existing conditions from these roadways are shown in Table 9-3.

As shown in Table 9-3 existing traffic noise levels from all roadways within the Plan area, except for U. S. Highway 50 and El Dorado Hills Boulevard near U. S. Highway 50, are less than the HUD exterior standard of 65 dB Ldn, which is referenced in the El Dorado County Noise Element of the General Plan.

EL DORADO HILLS

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NOISE MONITORING LOCATIONS

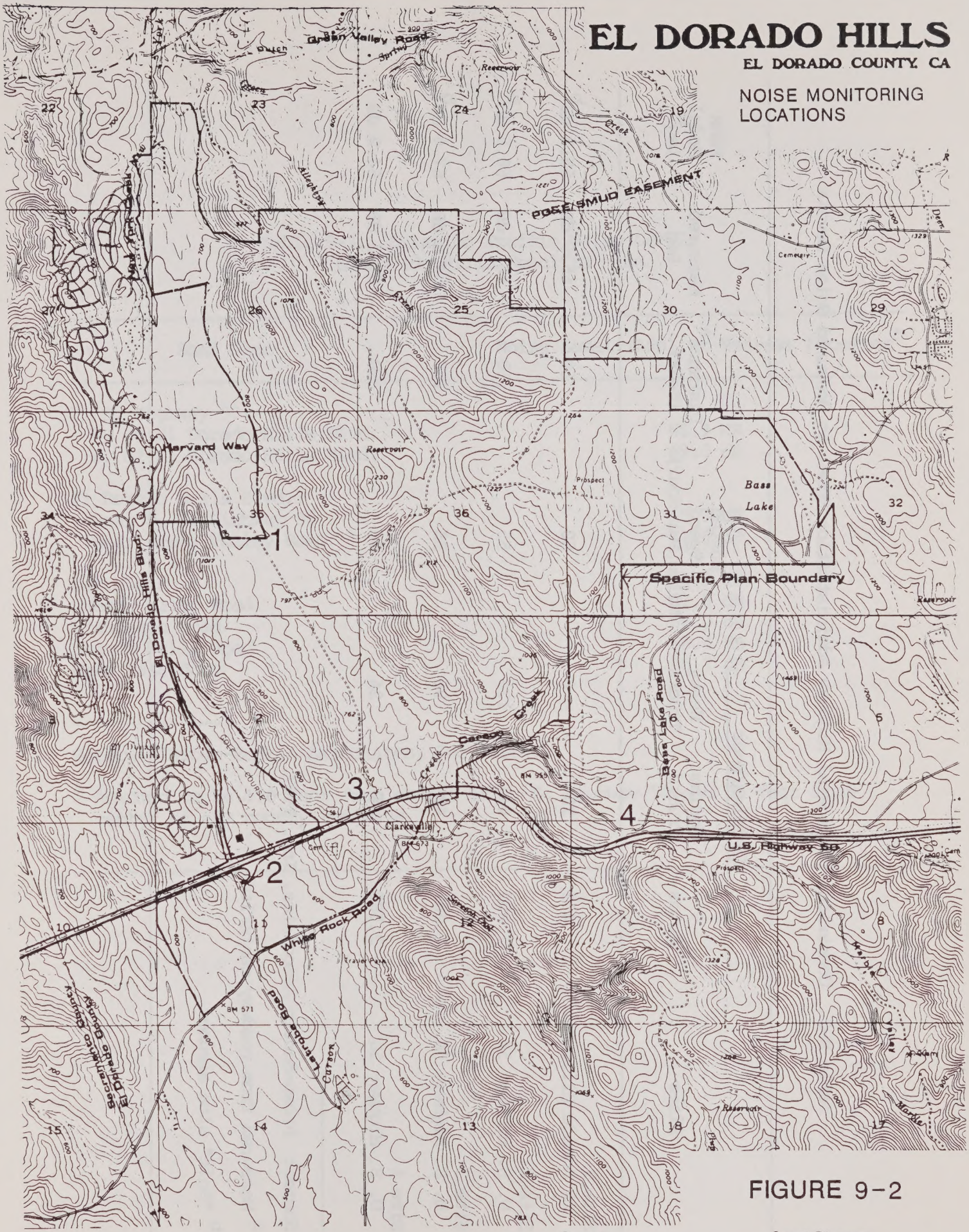


FIGURE 9-2

Owner

El Dorado Hills Investors, Ltd

3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner

Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

Table 9-2. Comparison of Federal Highway Administration Model to Measured Noise Levels

Sites	Vehicles/Hour			Posted Speed (Miles Per Hour)	Distance[a] (Feet)	Measured Leq	FHWA Model Leq[b]
	Autos	Medium Trucks	Heavy Trucks				
Site 1 El Dorado Hills Blvd.	452	20	8	50	60	65.9 dB	65.2 dB[b]
Site 2 U. S. Highway 50	1,952	44	128	55	150	66.3 dB	68.5 dB[b]
Site 3 U. S. Highway 50	2,068	48	96	55	160	64.4 dB	67.5 dB[b]
Site 4 U. S. Highway 50	2,588	44	36	55	200	67.3 dB	64.9 dB

Source: Brown-Buntin Associates, Inc. 1987.

[a] Measured from roadway centerline

[b] "Soft" site assumed

Table 9-3. Existing Traffic Noise Levels
El Dorado Hills Specific Plan

Road Name	Noise Level (Ldn) at Nearest Receiver[a]
U. S. Highway 50:	
W. of El Dorado Hills Blvd.	68.9 dB
E. of El Dorado Hills Blvd.	69.0 dB
El Dorado Hills Blvd.:	
Near U. S. Highway 50	65.3 dB
Near Green Valley Road	61.6 dB
Latrobe Road	62.2 dB
Green Valley Road	62.8 dB
Francisco Road	56.9 dB
Salmon Falls Road	58.4 dB
Bass Lake Road	55.7 dB

Source: Brown-Buntin Associates, Inc. 1987.

[a] Assumed to be 150 feet from center of U. S. Highway 50 and 75 feet from center of the county roadways.

Impacts

Two conditions were analyzed to determine noise impacts: Existing Conditions and 2010 Condition.

Existing Conditions

Roadway Noise Within and Outside the Plan Area. Existing and planned roadways within and adjacent to the Plan Area were analyzed using the FHWA model with the above traffic assumptions. The roadways selected for analysis outside the Plan Area were those which would have a minimum 1-decibel increase in noise levels due to project-related traffic. Additional assumptions included flat topography and full view of the roadway. The results of the traffic noise analysis at the location of the nearest receiver from the roadway centerline are given in Table 9-4.

Based on the calculations in Table 9-4, project-related traffic noise levels within the Plan Area (roadways marked by footnote a or b in Table 9-4) would generally increase from 3.1 dB to 10 dB. Outside the Plan Area increases in project-related traffic noise levels would range from 0.5-8.4 dB Ldn.

The significance of changes in noise level may be determined by comparison to Table 9-5. In general, if the change in noise level is about +5 dBA or greater and the resulting level exceeds 65 dB Ldn at sensitive receiver locations, the change may be considered significant.

Table 9-5 is commonly used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones of broad-band noise or to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels. It is probably not directly applicable to public perception of identifiable intrusive noise sources in very quiet environments because of the difference in frequency content between background noise sources and intrusive sounds, as well as the fact that the absolute amount of energy required to make a given change in sound pressure level is much smaller at low noise levels than at higher levels. Table 9-5 should therefore only be applied in a general manner to show the relationship between changes in sound energy, sound pressure levels, and subjective reaction.

As stated, calculated traffic noise levels as shown in Table 9-5 are based on the assumptions that the roadway and nearest receiver are at the same elevation and that full or partial shielding of the receiver caused by topography is not a factor. In order to illustrate the effects of complex traffic

Table 9-4. Calculated Traffic Noise Levels
With and Without Specific Plan Development at Nearest Receiver

Level, dB Ldn

Road Name	Current	Current + Area Plan	Cumulative (2010)	Change Plan Area, dB	Current vs. Cumulative, dB
Green Valley:					
W. of Francisco	62.8	66.5	69.7	+3.7	+6.9
Francisco to Salmon Falls	62.8	65.7	67.8	+2.9	+5.0
Salmon Falls to Silva Valley	62.8	65.9	67.7	+3.1	+4.9
Silva Valley to Bass Lake	62.8	63.3	65.3	+0.5	+2.5
E. of Bass Lake	62.8	64.9	68.0	+2.1	+5.2
White Rock:					
W. of Latrobe[a]	N.A.	----	69.4	-----	-----
Latrobe to U. S. Hwy. 50[b]	N.A.	----	71.1	-----	-----
Francisco	56.9	62.9	65.9	+6.0	+9.0
Salmon Falls	58.4	61.2	62.3	+2.8	+3.9
El Dorado Hills Blvd.:					
N. of Harvard	61.6	65.7	67.7	+4.1	+6.1
Harvard to Wilson[a]	61.6	67.9	68.9	+6.3	+7.3
Wilson to U. S. Hwy. 50	65.3	69.3	71.6	+4.0	+6.3
Latrobe:					
Hwy. 50 to White Rock[b]	62.2	71.8	73.1	+9.6	+10.9
S. of White Rock	62.2	70.6	71.4	+8.4	+9.2
Silva Valley:					
Green Valley to Ridge[a]	----	----	65.0	-----	-----
Ridge to Village Green[b]	----	----	64.3	-----	-----
Village Green to Country Club[b]	----	----	64.6	-----	-----
Country Club to U. S. Hwy. 50[b]	----	----	67.8	-----	-----
Harvard	N.A.	----	65.9	-----	-----
Wilson Way:					
W. of El Dorado Hills Blvd.	----	----	67.3	-----	-----
El Dorado Hills Blvd. to Silva Valley[b]	----	----	65.3	-----	-----
Village Green[b]	----	----	63.4	-----	-----
Country Club:					
Silva Valley to Ridge[b]	----	----	66.4	-----	-----
Ridge to Bass Lane[b]	----	----	62.9	-----	-----
Bass Lake:					
Green Valley to Country Club[a]	55.7	64.0	65.9	+8.3	+10.2
Country Club to U. S. Hwy. 50[a]	55.7	65.9	68.2	+10.2	+12.5
U. S. Hwy. 50:					
W. of El Dorado Hills Blvd.[a]	68.9	72.6	75.1	+3.7	+6.2
El Dorado Hills Blvd. to Silva Valley[b]	68.9	72.0	73.5	+3.1	+4.6
Silva Valley to Bass Lake[b]	68.9	72.8	74.8	+3.9	+5.9
E. of Bass Lake	68.9	72.2	73.9	+3.3	+5.0

Source: Brown-Buntin Associates, Inc. 1987.
Notes:
Nearest receiver assumed to be 150 feet from center of U. S. Highway 50 and 75 feet from center of other roadways.

N.A. = Not Available
a = Roadway segments partially within Plan area
b = Roadway segments entirely within Plan area

Table 9-5. Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dBA	Subjective Reaction	Factor Change in Acoustical Energy
1	Minimum Detectable Change (Laboratory)	0.26
3	Usually Noticeable Change	2.0
5	Definitely Noticeable Change	3.2
10	Twice (or Half) as Loud as Before	10.0

Sources: Various, reported by Brown-Buntin Associates, Inc. 1987.

relationships, which are common in foothill areas, the FHWA Model was run assuming the following scenarios:

1. The nearest receiver is well elevated above the roadway, resulting in no ground absorption of traffic noise.

2. Instead of full view of a roadway (180° view), the nearest receiver only views the central 90° of the roadway; the side views were blocked by topography.

3. The nearest receiver is completely blocked from direct view of the roadway by topography which extends 5 feet above the receiver.

If scenario No. 1 is assumed, in which no ground absorption of noise occurs due to elevation of the receiver well above the roadway, the traffic noise levels reported in Table 9-4 would be increased by about 2-4 dB Ldn, depending on the distance to the receiver. Scenario No. 2 would result in a decrease of about 3 dB Ldn if only the central 90° of the roadway were visible to the receiver. If the roadway is blocked from view by topography extending 5 feet above the receiver's head, the levels in Table 9-4 would be reduced by about 5-9 dB Ldn, depending on distance to the roadway and the geometric relationships of the receiver, topography, and roadway. It should be noted that only the <u>resulting</u> noise levels would be affected by the complexities illustrated by scenarios 1-3. The <u>change</u> in traffic noise levels occurring as a result of traffic volumes attributable to the Specific Plan would not be affected.

The change in traffic noise levels due to development of the Plan Area is considered significant on the following roads within the Plan Area: portions of Silva Valley Parkway, Country Club Drive, Latrobe Road, and White Rock Road. Outside the Plan Area the change in traffic noise levels due to development of the plan area may be considered significant on portions of El Dorado Hills Boulevard and Bass Lake Road. To reduce to a less-than-significant level, an acoustical analysis should be prepared demonstrating compliance with the HUD noise standards for residential developments located adjacent to U. S. Highway 50 and for county roadways having an ADT of 13,000 or more.

It is anticipated that markets and other retail shops would be constructed in the areas proposed for commercial uses, and it is assumed that truck deliveries to these stores would occur. Truck movements have the potential to produce adverse noise impacts on adjacent residential properties. To predict the noise impacts, it is necessary to know the number of truck deliveries per day, the distribution of these deliveries through the day and night, the type of trucks commonly making deliveries, the location of loading docks, and truck delivery routes leading to and from the loading areas. This information can be developed when specific building plans are available showing the number and type of stores and their locations with respect to

adjacent residential areas. Since specific building plans have not yet been prepared, it is not possible to predict noise impacts at this time.

It is possible, however, to determine whether truck noise mitigation measures are likely to be required, by examining typical truck noise emissions and operational cycles. BBA file data for large shopping centers indicate that most truck deliveries involve a brief noise event when the truck arrives at the loading dock and when the truck starts and departs the area. In most cases, the truck engine is shut down, but it is possible that the engine may be left idling, typically for 15 to 20 minutes. Loading activities are generally not significant noise sources, although some impact noise and voices may be audible.

The noise from passing trucks, idling trucks, and loading activities during nighttime deliveries causes concern because of the potential for waking nearby residents. The maximum noise levels of slowly passing trucks are typically 70 to 75 dBA at 100 feet. Idling trucks emit 60 to 65 dBA at 100 feet. Noise levels due to loading activities are variable, but are probably less than 60 dBA at 100 feet.

Residential areas nearest shopping centers may be adjacent to truck loading areas. Because of the potential proximity of these sensitive land uses, it is possible that noise from loading activity would exceed the HUD standards and the county's stationary source noise level standards in the Noise Element. The extent of possible violations would depend upon the physical configuration of the commercial areas and buildings, whether nighttime loading occurs, and whether shielding of sensitive uses is provided by site topography, depressed loading areas or property line barriers.

Commercial area noise impacts upon adjacent residential uses is considered significant. To reduce to a less-than-significant level, an acoustical analysis should be prepared by a qualified acoustical consultant for designs and layouts of shopping centers proposed for locations adjacent to existing or planned residential areas.

The potential for project-related traffic noise to affect activities at the existing high school and proposed school sites also exists. The projected change in traffic noise levels is about 4 dB Ldn near the existing and proposed schools adjacent to El Dorado Hills Boulevard, which would be considered between a usually noticeable and a definitely noticeable change. The resulting traffic noise level after implementation of the Specific Plan would be about 68 to 69 dB Ldn at 75 feet, which is considered normally unacceptable by the HUD standards.

Activities potentially affected by noise in the village green/community center, golf courses, and natural open space areas include equestrian activities, swimming, playing, archery,

hiking, and golfing. Equestrian uses would be unaffected on trails away from busy roadways. Swimming and playing activities generate noise themselves and are not considered noise sensitive. Archery and golfing are likewise not considered to be noise sensitive, and such activities would be unaffected. Hikers would possibly note a change in traffic volume and noise levels in the vicinity of busy roadways. Existing background noise levels are dominated by distant traffic so that the extent of change in background noise probably would be very small, if at all perceptible. In general, noise from traffic and onsite activities due to development of the Plan Area would have a less-than-significant impact upon outdoor activities.

Construction Noise Within the Plan Area. During the construction phases of the project, noise from construction activities would dominate the noise environment in the immediate area. Activities involved in construction would generate noise levels, as indicated in Table 9-6, ranging from 70 to 90 dBA at a distance of 50 feet. Construction activities would be temporary in nature and would probably occur during normal working hours.

Noise also would be generated during the construction phase by increased truck traffic on area roadways. The most significant construction-generated noise source would be truck traffic associated with transport of heavy materials and equipment. This increase would be of short duration and limited primarily to daytime hours.

Construction noise impacts are considered potentially significant. To reduce to a less-than-significant level, construction should be limited to daytime hours, heavy equipment and compressors should be fitted with adequate mufflers and enclosures, and all project-related construction traffic should comply with provisions of state laws relating to speed control and noise emissions.

Aircraft Noise. Aircraft noise exposures from Mather Air Force Base operations in the project area would be within acceptable limits in terms of cumulative noise exposure as described by CNEL. However, single event noise levels produced by aircraft could be deemed excessive by some individuals. This impact is considered significant and unavoidable.

2010 Plus Project Condition

Roadway Noise within the Outside the Plan Area. Based on the calculations in Table 9-4, cumulative (2010) traffic would result in noise levels exceeding the HUD exterior standard of 65 dB Ldn at the nearest receiver on all existing and planned roadways within the Plan Area except for Silva Valley Parkway from Ridge Road to Country Club Drive, Village Green Drive, and Country Club Drive from Ridge Road to Bass Lake Road.

Table 9-6. Construction Equipment Noise

Type of Equipment	Maximum Level, dBA
Scrapers	88
Bulldozers	87
Heavy trucks	88
Backhoe	85
Pneumatic tools	85

Source: Cunniff 1977.

Cumulative (2010) noise levels based on future traffic volumes with project-related impacts would exceed the HUD exterior noise standards of 65 dB Ldn at the nearest receiver on all roadways selected for study outside the Plan Area, except for Salmon Falls Road.

The change in traffic noise levels due to cumulative development, with or without the project, is considered significant. To reduce to a less-than-significant level, an acoustical analysis should be prepared demonstrating compliance with the HUD noise standards for residential developments located adjacent to U. S. Highway 50 and for county roadways having an ADT of 13,000 or more.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

None.

Mitigation Measures Recommended by the EIR Consultant

Existing Conditions

Prepare an Acoustical Analysis Demonstrating Compliance with the HUD Noise Standards for Residential Developments Located Adjacent to U. S. Highway 50 and for County Roadways Having an ADT of 13,000 or More. Mitigation of traffic noise may be achieved by construction of barriers, reduced vehicle speeds, restriction of truck traffic, increased setbacks, and by advantageous use of natural topographic barriers.

The practicality of barriers along existing and planned roadways would depend upon actual traffic noise level, receiver locations, topography, and roadway access. Detailed analyses of these factors would be required prior to barrier design, and the available noise reduction would range from about 3 dBA to 10 dBA. Costs of a barrier construction program would be quite high.

It is feasible to reduce traffic noise by maintaining relatively low vehicle speeds. Lower traffic speeds may be obtained by more frequent placement of signal-controlled intersections and boulevard stop signs and, to a certain extent, enforcement of speed limits. The predicted noise impacts are based upon free-flowing traffic conditions at speeds of 45 to 55 mph. Reducing vehicle speeds to 35 mph would reduce traffic noise levels by 3 to 4 dBA.

Truck traffic restrictions must, by law, be based upon safety or weight limit considerations. The enactment of medium

and heavy truck traffic restrictions for residential streets would, however, reduce traffic noise levels significantly. If warranted by other considerations, elimination of medium and heavy truck traffic on selected roads would reduce traffic noise levels by about 2 dBA.

During the detailed project design, effective mitigation of traffic noise could be achieved by increasing the setback of residences from roadways. Traffic noise levels could be reduced by 4-5 dB if residences were set back 150 feet instead of the assumed 75 feet from county roadways. If residences could be set back 300 feet from roadways, traffic noise reduction of 8-10 dB would result.

Outdoor activity areas could be shielded from traffic noise by siting homes behind hills and other topographic barriers. Depending on the geometric relationships of the receiver, topography, and the roadway traffic noise a reduction of 5-9 dB could result.

Prepare An Acoustical Analysis for Designs and Layouts of Shopping Centers Proposed for Locations Adjacent to Existing or Planned Residential Areas. Mitigation could be accomplished by scheduling to minimize nighttime loading, careful siting and design of loading facilities (depressed and shielded) to minimize noise impacts, and the use of property line barriers. Specific mitigation measures would depend on final building plans and project layout.

Limit Construction to Daytime Hours. Limit construction to daytime hours (7 a.m. to 9 p.m) and require that all heavy equipment and compressors be fitted with adequate mufflers and enclosures.

Require That All Project-Related Construction Traffic Complies With Applicable Provisions of State Laws Relating to Speed Control and Noise Emissions.

2010 Plus Project Condition

Prepare an Acoustical Analysis Demonstrating Compliance With the HUD Noise Standards for Residential Developments Located Adjacent to U. S. Highway 50 and for County Roadways Having an ADT of 13,000 or More.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to noise are included in Appendix I.

Chapter 10

Geology, Seismicity and Soils

This chapter is based on a report prepared by George A. Wheeldon & Associates.

Setting

Landform

The Plan Area lies at the transition between the Sacramento Valley and the lower foothills of the Sierra Nevada mountains. Elevations range from about 600-1,200 feet above sea level, compared to the 300-foot elevation near the City of Folsom and 2,000-foot elevations near Placerville. The lower elevations are on the west side of the Plan Area while the higher elevations are on the east side (Figure 10-1).

Slopes in the Plan Area range from 0-5 percent up to 25 percent and over as shown in Figure 10-2. Generally, the steeper slopes (25 percent and over) are found near the western side of the Plan Area parallel to El Dorado Hills Boulevard, in the southern portion of the Plan Area near Carson Creek, and in the northern area near the transmission line rights-of-way. Three relatively parallel northwest-southeast ridges range from 15-25 percent slopes with the remainder of the area at 0-5 or 5-15 percent slopes.

Regional Geology

The Plan Area lies within the western belt metamorphic rocks of the Sierra Nevada. The rocks of this area have undergone several complex stages of metamorphism including ocean floor subduction and accretion from the southwest and periods of Sierra Nevada mountain building. These stresses have resulted in a general northwesterly trend in the structural fabric of the rock units and fault zones.

The western branch of the Bear Mountains fault zone (BMFZ), which separates volcaniclastic and slaty rocks on the west from ophiolitic rocks on the east, lies near the western boundary of the Plan Area. The Pine Hill Intrusive Complex (Springer 1971) lies to the east.

General Geology of the Plan Area

Four rock units are exposed on or near the Plan Area: Copper hill volcanics, and metasedimentary, metavolcanic, and ultramafic rocks of the Foothill melange (see Figure 10-3).

Copper hill volcanics are composed of mafic to andesitic pyroclastic rocks and are exposed at the western margin of the study area.

Foothill melange metasediments are dark siltstones and mudstones that have been metamorphosed to schists. These rocks occur at the extreme eastern boundary of the study area.

Metavolcanics of the Foothill melange occupy nearly all of the Plan Area. These rocks are part of the Folsom Dike Swarm (Saleeby 1981). They consist of dark greenish gray, aphanitic to slightly, coarse-grained, to well foliated feldspar-pyroxene-chlorite schist (the metamorphic equivalent of diabasic to gabbroic dikes). Single dikes range in thickness from 1 or 2 inches to a foot or more.

Ultramafic rocks occur in elongated bodies in the western portion of the Plan Area near and within the BMFZ. These rocks are composed of green-gray massive to sheared serpentinite, with talc schist and sheared bedrock along contacts.

Structural Features

The complex history of this area has resulted in several structural features observed in the Plan Area. Stresses involved in ocean floor subduction and accretion produced foliation within the metavolcanics that trends approximately N 25-35 W and dips to the near vertical.

Several joint systems have resulted from nearby intrusions and Sierra Nevadan orogenic events. Major joint sets have influenced formation and orientation of many of the minor east-west drainage systems. Northwest orientation of major ridges and valleys is also a result of the influence that joint systems and compositional changes within the rock unit have on weathering and erosion.

Faults

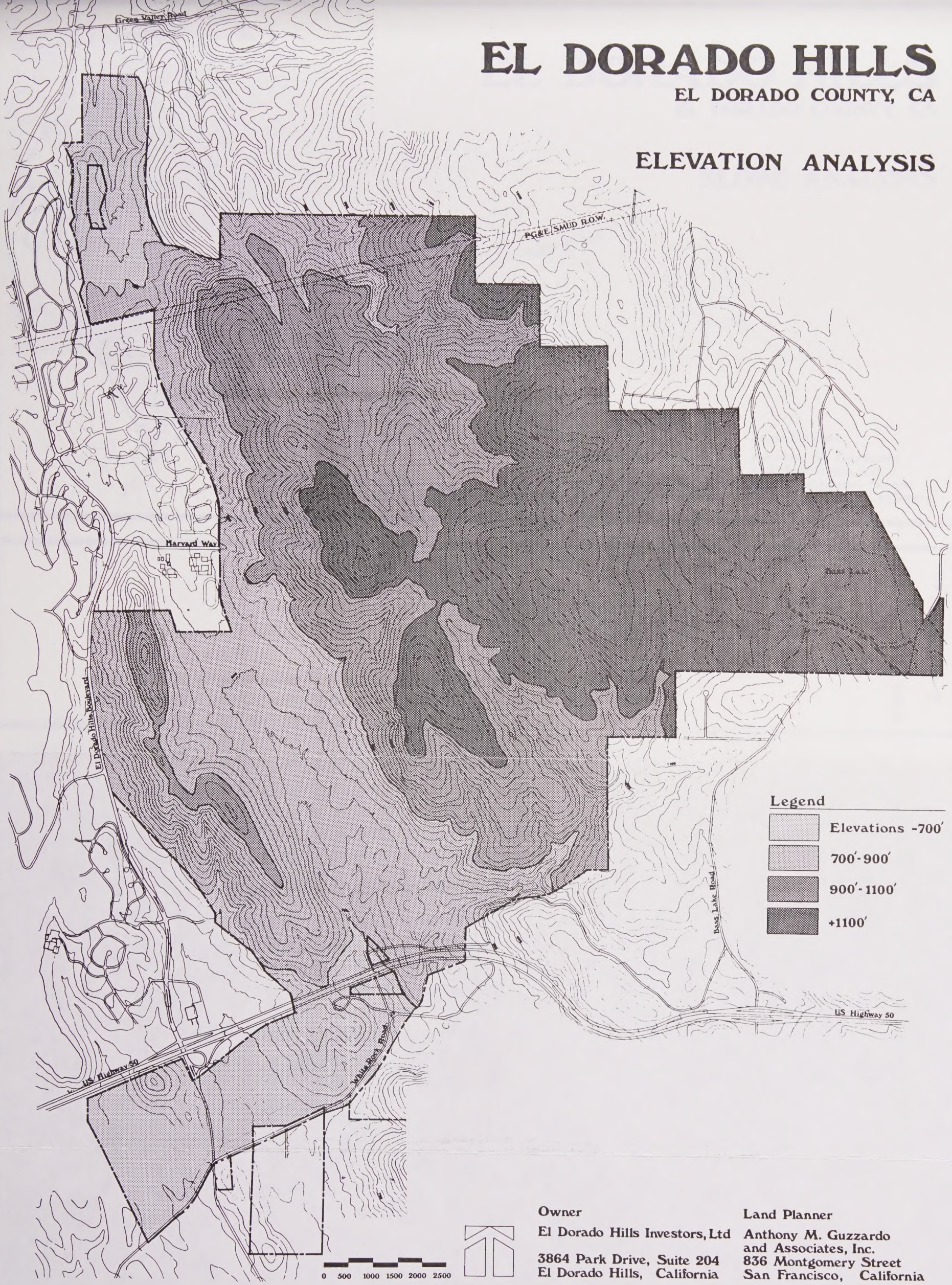
Fault zones have also developed in response to previous tectonic stresses. As mentioned above, the BMFZ is the primary fault in the area.

The BMFZ trends north to northwesterly along the western edge of the foothills for approximately 150 miles. This zone splits into east and west branches at the Cosumnes River, with

EL DORADO HILLS

EL DORADO COUNTY, CA

ELEVATION ANALYSIS



Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

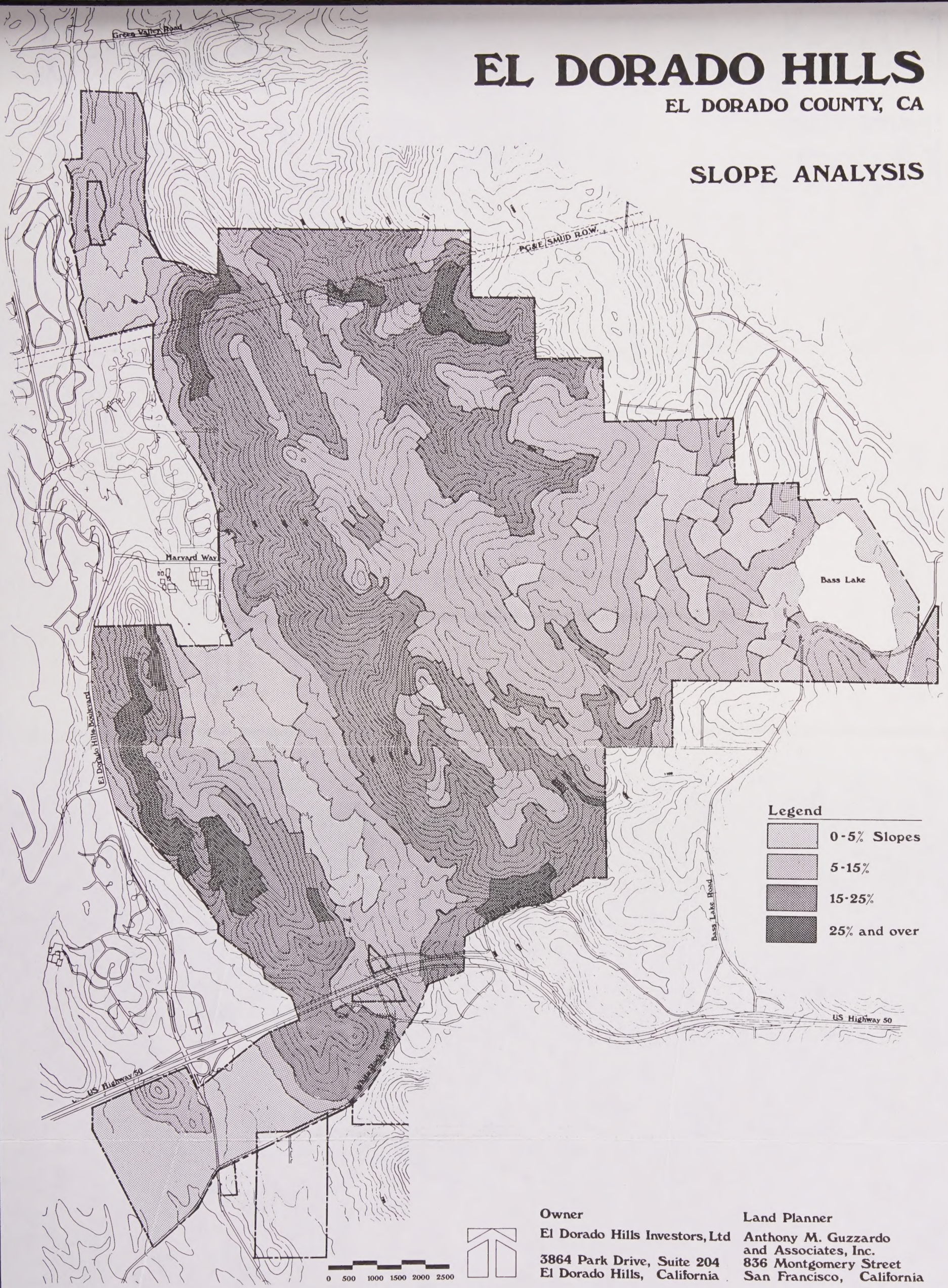
Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 10-1.
ELEVATION ANALYSIS

EL DORADO HILLS

EL DORADO COUNTY, CA

SLOPE ANALYSIS



Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 10-2.
SLOPE ANALYSIS

EL DORADO HILLS

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GEOLOGIC MAP

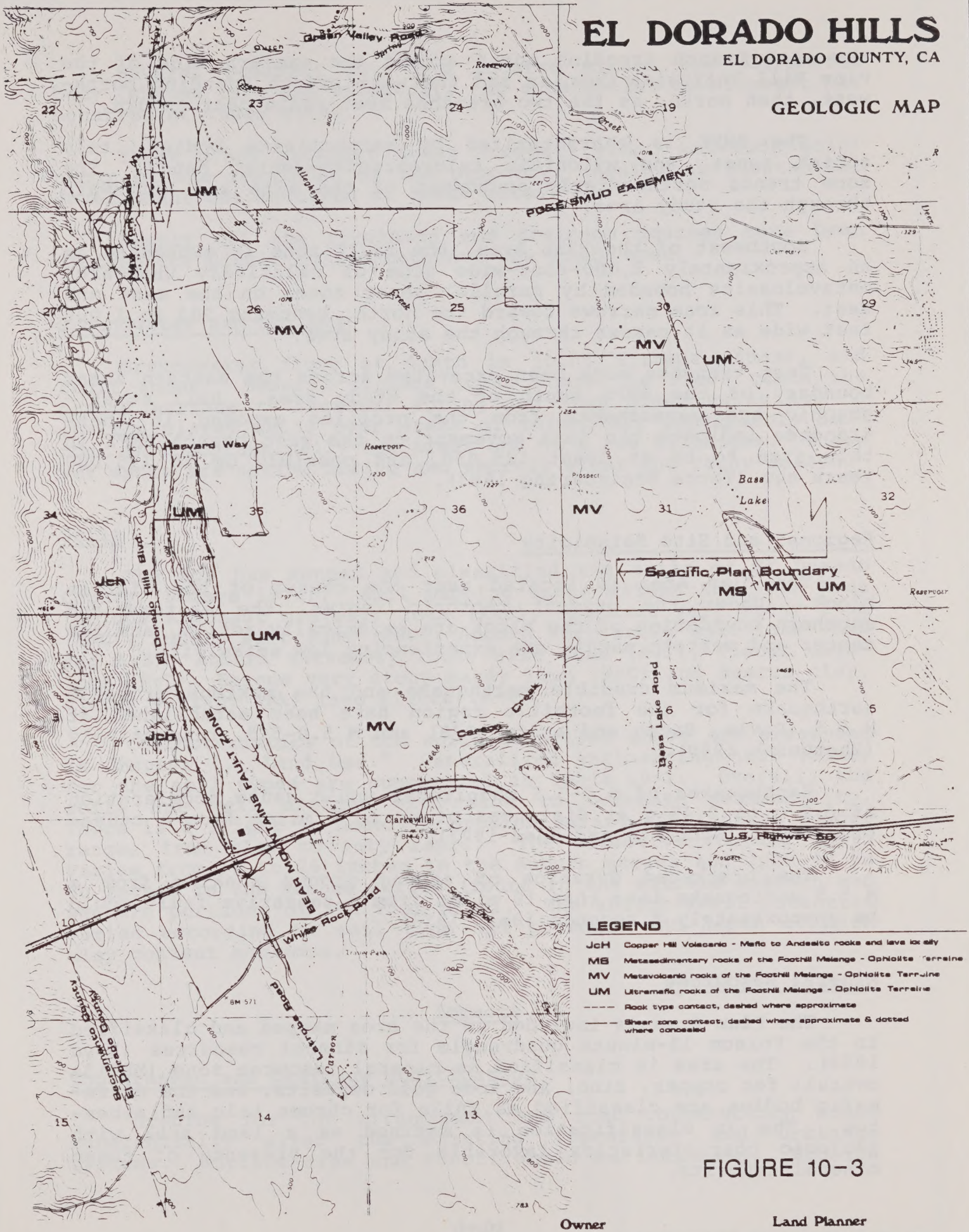


FIGURE 10-3

10-3

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

the east branch trending north around the eastern side of the Pine Hill Intrusive Complex and the west branch trending northwest, then north, as the two branches meet again near Auburn.

The BMFZ is characterized by serpentinite bodies, talc schist zones, and mylonitic talc-sericite-schist bands. The zone trends northwesterly southwest of the site and northward through the study area.

Southwest of the Plan Area, the fault zone is expressed as an approximately 2,000-foot-wide zone of relatively unsheared metavolcanics bounded by parallel shear zones on the east and west. This zone narrows toward the north, becoming 500 to 1,000 feet wide as it passes through the study area.

Test trenches have been excavated across the eastern shear boundary of the BMFZ south of the study area. Soil stratigraphic age assessments from the profiles exposed in these trenches indicate the last movement on the west branch BMFZ in this area to be at least 125,000, and possibly up to 195,000 years ago (Terra Engineering 1983).

Regional and Site Seismicity

The Plan Area is located near the center of the Sierran block. Under the present tectonic regime, the eastern and southern boundaries of the block are seismically active, and the center and western margin are experiencing low seismicity.

The maximum credible earthquake and the maximum probable earthquake for the foothills region have been established at M 6.5 (Davis, Bacon and staff 1979) and M 5.0-5.5, respectively (Sherburne 1980).

Earthquakes of 5.0-5.5 magnitudes would cause acceleration of 0.2 g to 0.45 g at distances of up to 2 miles from a causative fault (Schnable and Seed 1972).

The bracketed duration of strong ground shaking from a M 5.5 earthquake less than 10 miles from a causative fault would be approximately 8 seconds (Bolt 1975).

Mineral Resources

The Plan Area is included in the area mapped and classified in the Folsom 15-minute quadrangle for mineral resources (Loyd 1984). The area is classified as mineral resource zone (MRZ)3a overall for copper, zinc, and lode gold deposits, and the ultramafic bodies are classified as MRZ3a for chrome talc and asbestos. The 3a classification is defined as a land area with geologic characteristics favorable for the presence of these mineral deposits.

Several prospect pits are located within the ultramafic body (chrome talc and asbestos). No substantial development has occurred at these sites.

Three other prospect areas (copper, zinc, and lode gold) occur on the remainder of the property. Again, no substantial development has occurred at these sites.

Nearly all the creekbeds and drainage courses have been dredged for placer gold throughout the study area.

Groundwater and Springs

Groundwater flows at depth in joint systems, shear, and fault zones. Several springs occur where the flows reach the ground surface. Seasonal spring and seep areas exist due to shallow clayey soils over areas of relatively impermeable bedrock in topographically low areas and on a few hillsides. These wet spots are active during and shortly after the rainy season.

Soils

The SCS has mapped and classified the soils of El Dorado County (Rogers 1974). Soil mapping units within the Plan Area include Argonaut gravelly loam (AkC), Argonaut very rocky loam (AmD), Auburn silt loam (AwD), Auburn very rocky silt loam (AxD and AxE), Auburn extremely rocky silt loam (AyF), Placer diggings (PrD), Rescue very stony sandy loam (RfD) and Rescue clay, clayey variant (Rk) (see Figure 10-4).

Characteristics of the soils described above are presented in Chapter 4, "Land Use." Generalized engineering test values for the soil types are summarized in Table 10-1. Overall, the soils are well drained with slow to moderate permeability. There is a slight to moderate erosion hazard and surface runoff ranges from slow to very rapid. The effective rooting depth varies from 12 to 26 inches in the Auburn series and from 40 to 60 inches in the Rescue series (found in the extreme eastern and western portions of the Plan Area). The shrink-swell potential varies according to soil type and presence and depth of high clay content horizons.

Impacts

Topographic and Drainage Modification

Grading for lot arrangement and road construction would substantially alter the existing topography and drainage systems. Surface area and runoff would be increased. Erosion

Table 10-1. Engineering Test Data

Soils Series and Map Symbols	Depth to Bedrock (feet)	Depth From Surface of Typical Profile (inches)	USDA Texture	Unified	Percentage Passing Sieve No.4	No.10	No.40	No.200	Atterberg Values Liquid Limit	Plas-ticity	Reaction (pH Value)	Shrink-Swell Potential
Argonaut: AkC, AmD	1.5-3.5	0-10	gravelly loam and gravelly silt loam	SM	75-90	86-85	60-80	35-50	10-20	0-10	5.6-6.5	low
		10-30	Clay	MH,CH	100	70-90	65-85	65-80	50-65	20-35	6.1-6.5	high
		30	Metaandesite									
Auburn: AwD, AxD, AxE, AyF	1.0-2.0	0-14	Silt loam	ML,CI	90-100	85-95	75-85	70-80	20-30	5-10	6.1-7.3	low
		14	Metamorphic rock									
Placer diggings: PrD[a]												
Rescue: RfD	3.5-5.0	0-10	Sandy loam	SM,SC	100	90-100	65-75	40-50	20-30	5-10	5.6-6.5	low
		10-34	Sandy clay loam	SC,CL	100	95-100	70-80	45-55	30-40	20-30	6.1-6.5	moderate
		34-66	Weathered gabbrodorite									
Rescue, clayey variant: Rk	3.5-5.0	0-40	Clay	CH	100	100	90-100	75-95	50-60	30-40	6.1-7.8	high

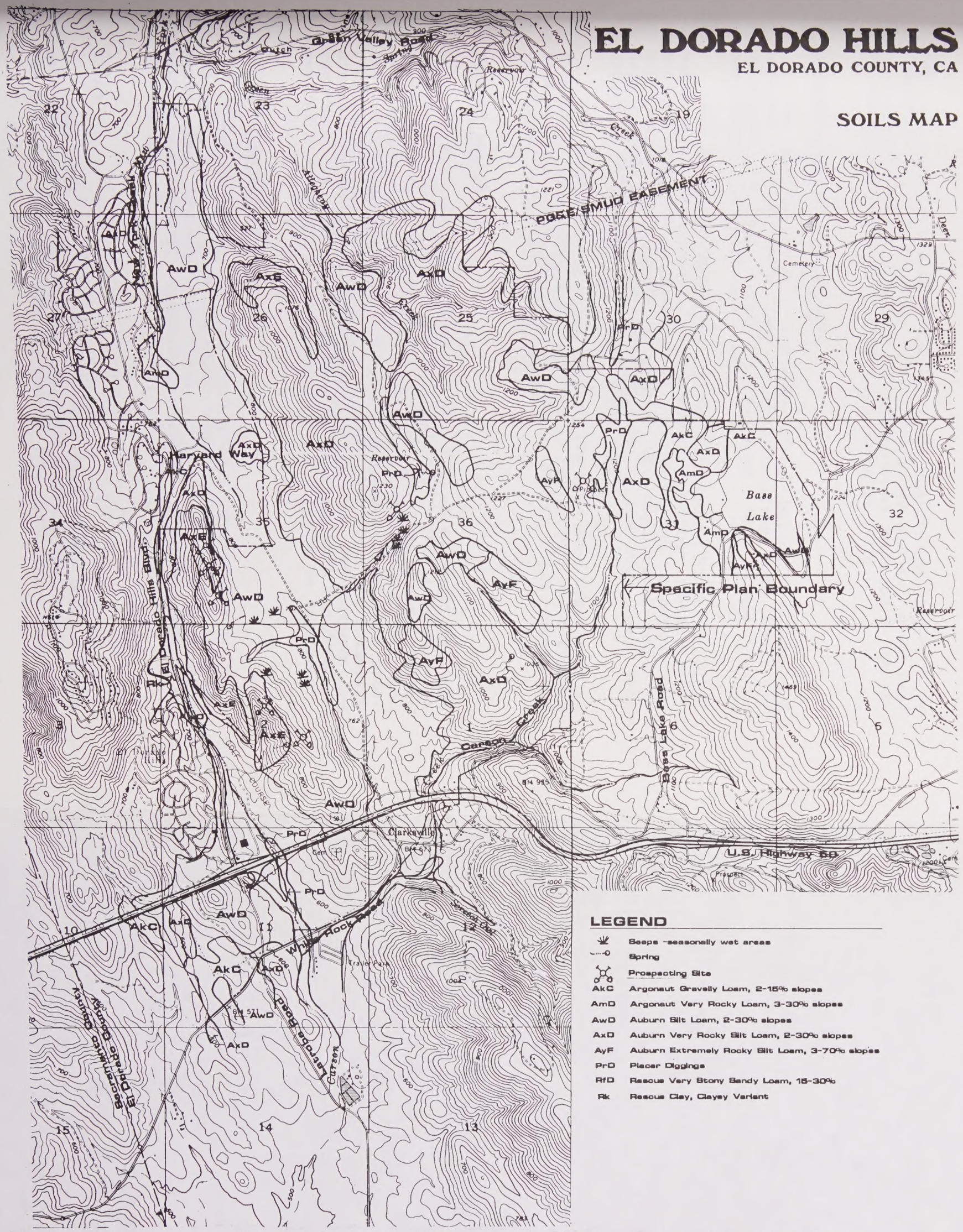
Source: George A. Wheeldon & Associates.

[a] Interpretations not made; properties too variable.

EL DORADO HILLS

EL DORADO COUNTY, CA

SOILS MAP



LEGEND

- Seeps -seasonally wet areas
- Spring
- Prospecting Site
- AkC Argonaut Gravelly Loam, 2-15% slopes
- AmD Argonaut Very Rocky Loam, 3-30% slopes
- AwD Auburn Silt Loam, 2-30% slopes
- AxD Auburn Very Rocky Silt Loam, 2-30% slopes
- AyF Auburn Extremely Rocky Silt Loam, 3-70% slopes
- PrD Placer Diggings
- RfD Rescue Very Stony Sandy Loam, 15-30%
- Rk Rescue Clay, Clayey Variant

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 10-4.
SOILS MAP

and siltation are considered to be a significant impact. To reduce to a less-than-significant level, the project would need to incorporate soil conservation measures as required by the El Dorado County Resource Conservation District (RCD).

Regional and Site Seismicity

As far as seismic concerns about building within and adjacent to the BMFZ, the Uniform Building Code (UBC) has developed seismic safety regulations for single family residences within seismic zones.

The existing residences in the surrounding El Dorado Hills subdivisions were built by construction methods controlled by the UBC Codes of Seismic Safety. It is logical to assume that homes built to conform to current UBC regulations would be seismically safe within and adjacent to the Plan Area. This impact is considered less than significant.

The construction of schools in the Plan Area would require compliance with current Alquist-Priolo regulations which require site-specific evaluations of school sites. This impact is considered less than significant.

Mineral Resources

Residential development of the Plan Area would preclude development of potential mineral resources. This is considered a less-than-significant impact because the true mineral values are unknown. The greatest percentage of placer gold has been removed during previous dredging operations, and limited prospecting evidence indicates a low probability for other extensive mineral deposits. Urbanization of the area and current law regarding open pit mining operations would prohibit the development of a large mineral operation. No mitigation is required.

Groundwater and Springs

Existing spring and wet areas pose a potentially significant impact on road and building stability where these improvements would traverse wet zones. To reduce to a less-than-significant impact, appropriate subdrain systems should be constructed.

Soils

Four soil series on the Plan Area have clayey horizons with moderate to high shrink-swell potentials identified by the SCS. The Argonaut (AkC and AmD) and Rescue (Rk) series have layers

identified as having high shrink-swell potential, and the Rescue (RfD) series has a moderate potential horizon. These soil conditions are considered locally a potentially significant impact. To reduce to a less-than-significant level, expansive soil sites should be investigated and appropriate engineering designs implemented during construction.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

1. Architectural Construction

   b. Buildings shall generally be designed and sited in accordance with the constraints of topography, vegetation, adjacent uses, and other natural features of a particular building site.

2. Site Development and Grading

   a. Grading for road, driveway, and site improvements shall be minimized.

   b. Grading volumes of cut-and-fill material shall be minimized and balanced onsite wherever possible. Larger grading volumes may be acceptable where improved visual and environmental effects will result.

   c. Residential structures or accessory structures on slopes in excess of 20 percent shall be carefully designed to ensure long term slope stability.

The developer will also be complying with the El Dorado County RCD guidelines, which will probably require the following:

1. Prior to grading operations, the developer should contact RCD for approval of an erosion control plan. Planning for grading work during the dry season can alleviate extra expenses for the additional erosion control practices that would be necessary if grading occurs in winter months.

2. Depending upon the prospect for soil erosion hazards, complete revegetation and stabilization of all disturbed areas, both within and outside of county rights-of-way, may be required. All road cuts-and-fills will have maximum slopes established. If cuts

expose subsurface rock, the project engineer should identify stabilization measures that will be required.

3. Revegetation of all disturbed soils will be accomplished with approved amounts and types of vegetative species, mulch, and fertilizer material as per the "El Dorado County Erosion Control Requirements and Specifications." To avoid costly additional practices, revegetation work should be planned to proceed between mid September and mid October.

4. Mitigation of sediment runoff beyond project boundaries will be addressed in the erosion control plan.

5. Areas involving extensive grading and shaping will require stockpiling/re-use of topsoil to provide for adequate revegetation.

6. Erosive velocities in water conveyance structures will be identified by the project engineer. Where necessary, riprap or similar practices will be required.

Mitigation Measures Recommended by the EIR Consultant

Investigate Expansive Soil Sites. Appropriately engineered designs and construction procedures would ensure against damage from expansive clays in areas identified by a geotechnical engineer as problem areas. Only those areas deemed as potential problem areas should be subject to further evaluation.

Construct Appropriate Subdrain Systems. During road construction, appropriate subdrain systems should be engineered for crossing springy and seasonally wet areas. Prior to foundation constructions, areas identified as wet should be inspected by a geotechnical engineer, and appropriate subdrain systems designed and installed.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to geology are included in Appendix I.

Mitigation Measures Required by State Law

Comply With the Uniform Building Code.

Comply With Current Alquist-Priolo Regulations Which Require Site-Specific Evaluations of School Sites.

Chapter 11

Hydrology and Water Quality

Setting

Surface Drainage

The El Dorado Hills area has a Mediterranean-like climate with hot sunny days, which is normal in the summer. In the winter, the area is subject to strong flows of marine air from the Pacific Ocean, which result in moderate to heavy precipitation. The average annual precipitation in the El Dorado Hills area is approximately 25 inches (Rogers 1974).

Most of the rainfall on the Plan Area results in surface runoff, because of the relatively impermeable soil types, shallow depth to bedrock, and the density of vegetative cover. As a result, very little groundwater recharge occurs.

Runoff from the Plan Area feeds several ephemeral and intermittent streams. The southern half of the Plan Area drains to Carson Creek, which is a tributary to Deer Creek and ultimately the Cosumnes River. The northern half of the Plan Area drains into either Allegheny Creek or New York Creek. Allegheny Creek is tributary to New York Creek, which feeds Folsom Lake approximately 2 miles north of the Plan Area. Table 11-1 shows the present (i.e., pre-project) estimated 100-year peak discharge at each drainage point shown on Figure 11-1, based on a methodology developed by the SCS (U. S. Soil Conservation Service 1976). Figure 11-1 shows the natural drainage basins for the Plan Area.

Most of the streambeds on the Plan Area are cut to bedrock or naturally armored by the large amounts of rock. Because of this, the streams are not downcutting or laterally eroding, and in most cases are quite stable.

Flood Zones

The Federal Emergency Management Agency (FEMA) creates Flood Insurance Rate Maps (FIRM) which show areas inundated by 100-year and 500-year floods. Bass Lake is the only portion in the Plan Area that is designated as being within the 100-year or 500-year flood.

Table 11-1. Pre- and Post-Project Peak Discharge

Drainage Point[a]	Tributary Map Area(s)[a]	Area (acres)	Average Slope (percent)	Maximum Flow Length (feet)	100-Year Flow[b] (cubic feet per second)	Percent Increase
A	1,3	1,299	12	16,000	727/780	7
B	2,4	944	12	10,000	569/661	16
C	3	83	20	4,000	66/ 75	14
D	4	790	12	8,000	503/582	16
E	5	130	4	3,000	83/100	20
F	6	129	5	3,000	92/104	13
G	5,6,7	445	6	7,000	246/290	18
H	8	116	9	5,000	80/ 92	15
I	9	217	11	6,000	148/169	14
J	10	120	15	3,000	98/111	13
K	10,11	600	15	10,000	368/422	15
L	5,6,7,8,9,12	1,256	16	14,000	723/842	16

Source: Gene Thorne Associates, based on U. S. Soil Conservation Service Engineering Field Manual for Conservation Practices, Chapter 2, Supplement 1, May 1985.

[a] See Figure 11-1.

[b] Pre-project/post-project.

EL DORADO HILLS

DRAINAGE PLAN 12

100 YEAR RUNOFF

DRAINAGE POINT	C.F.S.
A	727
B	569
C	66
D	503
E	83
F	92
G	246
H	80
I	148
J	98
K	368
L	723

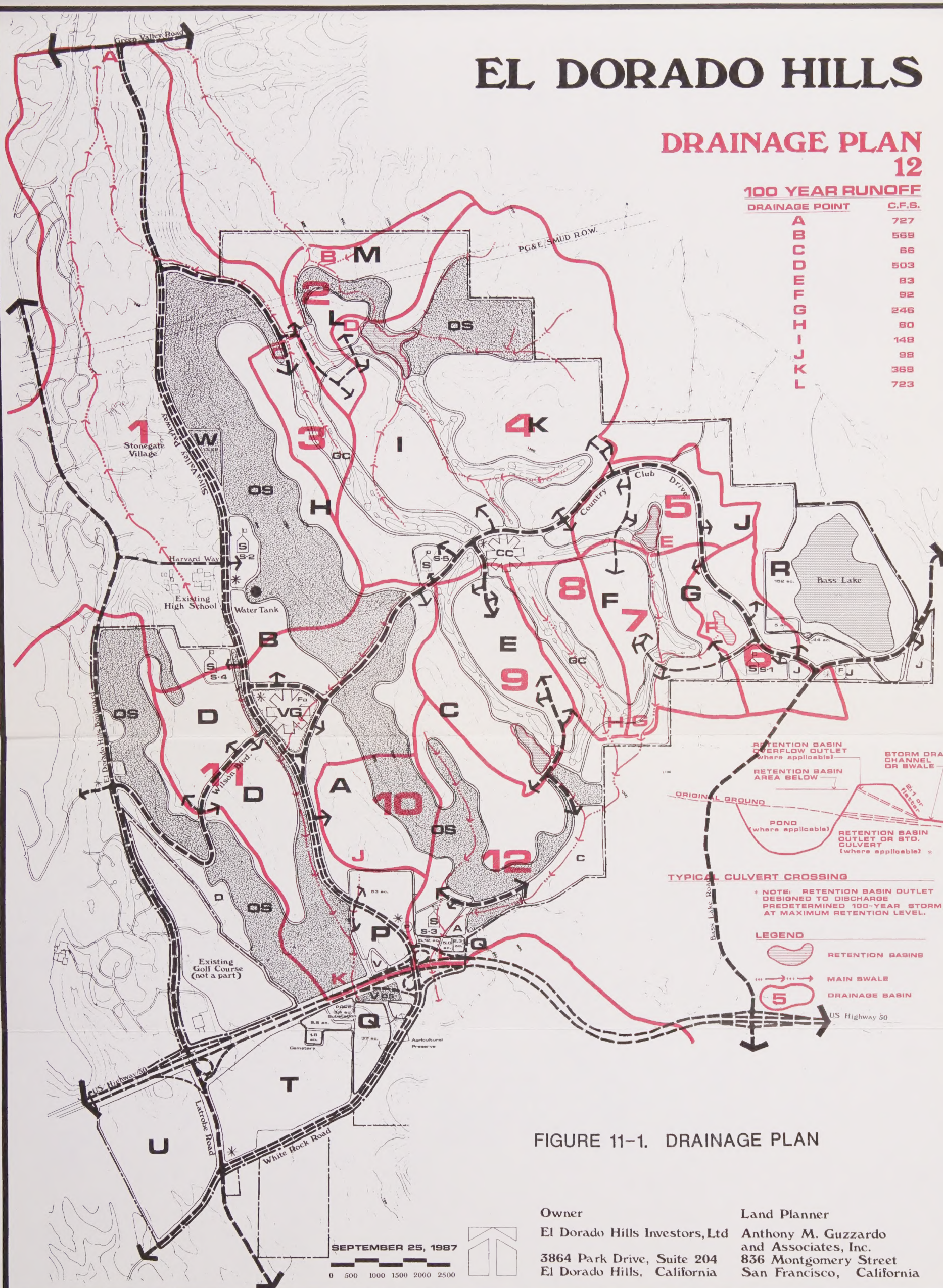


FIGURE 11-1. DRAINAGE PLAN

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

None of the areas immediately downstream of the Plan Area on New York Creek or Carson Creek is within a FEMA-designated flood zone. However, during storm events, Carson Creek does occasionally overflow its banks and flood Latrobe Road approximately 1 mile south of the Plan Area. This localized street flooding is due to limited capacity and vegetation growth at the Lathrope Road culvert. Similar localized flooding problems at the El Dorado Hills Wastewater Treatment Plant and the El Dorado Hills Business Park have been corrected by channel modifications (Herrlie pers. comm.).

To protect the existing mobile home park located just south of the Plan Area and adjacent to Carson Creek, makeshift levees have been constructed along Carson Creek for flood protection.

Water Quality

No water quality information specific to the surface flows in the Plan Area is available. The water draining from this area is estimated to be of fairly high quality, although the past and present grazing activity on the land probably has increased temperature, sediment, and nutrient levels above pristine conditions.

The soils in the Plan Area have a slight to moderate erosion hazard.

Impacts

Surface Drainage and Flooding

The urbanization process produces four effects on the local hydrology of an area. These are:

- o changes in peak flow characteristics;
- o changes in the total runoff and frequency of flooding;
- o possible reduction of groundwater recharge; and
- o enlargement and degradation of stream channels.

The proposed development would increase the amount of impervious surface area and the channelization of stormwater flow. This would increase onsite peak flow discharge by approximately 16 percent; see Table 11-1. The estimated increase is small compared to the normal increase caused by urban development because present runoff rates for the Plan Area are relatively high. The impact of increasing peak flow discharge by 16 percent in considered potentially significant. To reduce to a less-than-significant level, the developer has incorporated

retention ponds at several locations in the Plan Area. The goal of retention pond location and design is to reduce peak flows offsite to pre-project levels. The retention ponds would retain substantial portions of the high volumes onsite and release them gradually.

Groundwater recharge would not be significantly affected because little recharge occurs in the Plan Area. This impact is considered less than significant.

During grading and construction, increased erosion would cause some sedimentation in onsite streambeds, in retention ponds, and downstream from the project. However, once the project is built out, erosion and sedimentation rates would be substantially reduced, possibly to a level below that associated with the present grazing use of the land. These changes would affect the streams' equilibrium condition, inducing channel enlargement or deposition. However, most of the streambeds in the Plan Area are presently cut to bedrock or are heavily armored by natural rock; the impact of change in channel morphology is considered less than significant.

Water Quality

Potential water quality impacts from the proposed project would be of a short- and long-term nature. Short-term impacts would result from grading and construction activities, which would result in increased turbidity and sediment loading, as described earlier.

In addition, pollutants can be released during construction and transported to water bodies. Improper handling practices can be a transport mechanism. Washwater and solvents are often dumped in areas close to streams. Cement mixers, machinery, and tools, when cleaned close to waterways, cause water quality problems. Burial of oil and chemical wastes near construction sites can lead to seepage of pollutants after a period of time. Heavy construction equipment can transport pollutants from construction sites to stream systems.

The degree to which construction practices impact water quality is partially determined by the time of various construction activities and rainfall. Summer construction activities will decrease the sediment and other pollutant levels that may impact water quality. Likewise, construction during the winter tends to result in more erosion and sedimentation.

Long-term impacts to water quality would occur primarily as a result of runoff from urbanized uses that would enter Carson and New York Creeks. Runoff from surfaces such as streets, driveways, parking lots, and landscaped areas typically contains oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment. The concentrations and loads of pollutants

carried in urban runoff are extremely variable for a variety of reasons. Concentrations fluctuate with factors such as the volume of runoff reaching storm drains, the amount of time that has passed since the last storm, the relative mix of land uses in the watershed, and the degree to which yard and street cleaning is occurring. Because of this variability, it is difficult to assign a "typical" or "average" pollutant concentration or loading to urban runoff. Since the quality of El Dorado County urban runoff has not been accurately characterized, urban runoff quality data, developed in Fresno as part of the Nationwide Urban Runoff Program, is presented in Tables 11-2, 11-3, and 11-4.

Design of the golf courses and retention ponds and maintenance practices in these open space corridors, positively or negatively, could effect water quality. Vegetation along creeks, in drainage swales, and in retention ponds help to filter nutrients and sediments from the water. If natural vegetation is allowed to remain or develop in these swales it would help to reduce project water quality impacts. Fertilizers, pesticides, and herbicides applied on golf courses and open space areas could negatively impact runoff water quality if not carefully controlled.

Streamwater quality depends upon the actual runoff quality, runoff rate, and streamflow. The worst-case scenario for water quality of urban runoff does not necessarily coincide with the worst-case scenario for flooding. Pollutants tend to collect during dry periods and then create a pulse of high concentration with the first storm.

The impact of long-term release of urban pollutants and the resultant water quality degradation due to the project is expected to be typical of, and of the same order of magnitude as similar urbanization projects, and is considered. See Chapter 12, "Vegetation, Wildlife, and Aquatic Resources." Careful management of pesticide and herbicide use in the open space areas and maintaining natural vegetation in the drainageways of the golf courses is also recommended.

Construction-induced water quality degradation is considered a potentially significant impact. This impact would be reduced to a less-than-significant level by the developer complying with the El Dorado County RCD requirements, which require approval of an erosion control plan and revegetation of disturbed soils. See Chapter 10, "Geology, Seismicity, and Soils."

Table 11-2.

Ranges and Mean Concentrations of Conventional Constituents in Runoff

Constituent	Units	Concentration											
		Single-family residential			Multiple-family residential			Commercial			Industrial		
		N[a]	Range	Mean	N[a]	Range	Mean	N[a]	Range	Mean	N[a]	Range	Mean
Turbidity	NTU	49	1.7-900	57	72	2.0-320	49	71	1.6-300	31	83	1.0-800	160
Specific conductance	umhos/cm	121	15-222	56	230	17-606	66	256	8.0-808	90	285	96-9,960	404
pH	Standard units	97	6.5-8.3	7.2	169	6.4-8.8	7.1	203	6.1-8.9	6.9	221	4.9-7.5	6.7
Hardness	mg/l as $CaCO_3$	62	4.0-70	20	85	6.0-230	30	95	3.0-330	49	101	17-410	65
Alkalinity	mg/l as $CaCO_3$	65	7.0-73	19	89	5.0-150	25	96	1.0-257	36	101	5.0-221	84
Oil and grease	mg/l	11	1.0-8.0	3.0	17	0-5.0	1.5	18	0-26	4.2	15	0-80	11
Suspended solids	mg/l	64	9.0-1,540	246	86	8.0-4,300	634	94	2.0-3,720	264	100	51-2,770	684
Dissolved solids	mg/l	64	9.0-224	63	81	14-775	104	87	1.0-1,010	143	93	77-5,870	423
BOD-ultimate	mg/l	22	2.3-81	21	45	5.2-150	23	44	3.4-64	13	42	39-830	189
BOD-5-day	mg/l	22	2.1-53	15	45	3.1-110	15	44	2.7-30	8.4	42	30-330	149
COD	mg/l	34	27-290	106	58	31-1,400	157	50	12-460	95	56	150-2,580	620
Dissolved nitrogen	mg/l as N	64	0.63-21	4.8	86	0.8-33	5.5	83	0.7-66	8.1	79	4.0-54	20
Dissolved organic nitrogen	mg/l as N	62	0.19-12	2.6	84	0.10-25	3.0	85	0.01-27	3.6	86	0.01-38	12
Dissolved ammonia	mg/l as N	65	0.12-6.4	1.4	83	<0.01-7.3	1.4	87	0.22-17	2.2	86	0.90-20	6.6
Dissolved nitrite	mg/l as N	31	0.02-0.13	0.05	53	0.01-0.41	0.05	45	0.02-0.56	0.05	53	0.01-0.55	0.21
Dissolved nitrate	mg/l as N	25	0.18-2.1	0.75	45	0.10-6.6	0.89	39	0.14-4.5	0.78	42	0.01-3.3	1.2
Total phosphorus	mg/l as P	65	0.10-2.4	0.63	89	0.01-5.0	0.81	87	0.03-9.1	0.63	90	0.90-20	6.6
Dissolved phosphorus	mg/l as P	65	0.09-1.6	0.37	87	0.01-4.7	0.58	87	0.02-8.0	0.45	89	0.40-11	4.9
Dissolved orthophorphorus	mg/l as P	64	0.09-1.6	0.31	88	0.01-2.1	0.38	87	<0.02-4.8	0.28	66	0.60-9.0	3.7
Dissolved organic carbon	mg/l	36	4.4-550	75	58	4.6-460	64	47	4.4-260	54	56	20-2,300	190
Suspended organic carbon	mg/l	33	0.8-17	3.2	54	1.3-15	3.7	46	0.90-10	2.5	54	5.8-41	25
Dissolved calcium	mg/l	65	1.3-18	5.8	87	2.0-65	8.3	96	0.80-100	13.6	101	4.0-120	15
Dissolved magnesium	mg/l	65	0.01-6.2	1.3	87	0.20-16	2.1	96	0.10-22	3.5	101	1.6-26	6.4
Dissolved sodium	mg/l	65	0.70-18	3.9	87	1.0-49	6.8	96	0.60-37	6.8	102	5.7-1,800	74
Dissolved potassium	mg/l	65	0.80-9.8	3.3	87	0.8-19	3.4	96	0.30-15	2.9	99	5.2-62	24
Dissolved chloride	mg/l	64	0.60-14	3.4	88	0.60-65	5.1	95	0.20-31	5.5	102	4.8-3,000	112
Dissolved sulfate	mg/l as SO_4	61	4.2-27	8.3	88	3.6-76	12.2	95	3.1-190	21	102	<5.0-110	25
Dissolved silica	mg/l as SiO_2	44	0.34-27	3.0	68	1.5-25	4.7	64	0.50-44	3.2	74	1.6-30	5.4

[a]N = number of samples.

Source: Brown and Caldwell 1984.

Table 11-3.

Ranges and Median Concentrations of Metals in Runoff

Metals	Total recoverable metal concentration, ug/l											
	Single-family residential			Multiple-family residential			Commercial			Industrial		
	N[a]	Range	Median	N[a]	Range	Median	N[a]	Range	Median	N[a]	Range	Median
Priority pollutant metals												
Arsenic[b]	64	<1.0-8.0	1.0	87	<1.0-16	2.0	95	<1.0-17	2.0	16	1.0-67	14
Cadmium	31	<1.0-4.0	1.0	53	<1.0-6.0	1.0	49	<1.0-12	1.0	70	<1.0-4.0	1.0
Chromium	48	<1.0-40	8.5	70	1.0-62	15	68	1.0-37	11	86	<1.0-51	14
Copper	47	4.0-180	14	70	7.0-270	22	68	6.0-380	18	86	30-400	66
Cyanide[b]	5	<0.01	<0.01	5	<0.01	<0.01	6	<0.01	<0.01	3	<0.01	<0.01
Lead	63	15-2,100	170	91	25-940	170	95	9.0-1,200	100	107	16-360	74
Mercury	64	<0.10-8.6	0.10	88	<0.10-1.6	0.20	95	<0.10-0.50	0.10	107	<0.10-2.5	0.10
Nickel	62	1.0-85	11	91	2.0-310	19	94	1.0-120	10	107	4.0-98	24
Zinc	47	30-1,300	90	70	60-1,800	170	68	50-3,400	150	86	280-3,100	535
Other metals												
Aluminum	17	530-20,000	3,400	17	1,600-37,000	6,300	19	120-45,000	3,400	16	3,000-18,000	7,000
Iron	64	160-29,000	1,700	91	450-72,000	5,600	95	140-57,000	1,600	107	480-62,000	9,000
Manganese	32	20-480	110	38	40-1,600	200	46	30-1,700	280	37	170-1,600	360

[a]N = number of samples.

[b]Total arsenic and total cyanide.

Source: Brown and Caldwell 1984.

Table 11-4.

Ranges and Median Concentrations of Organics in Runoff

Constituent[a]	Concentration, ug/l											
	Single-family residential			Multiple-family residential			Commercial			Industrial		
	N[b]	Range	Median	N[b]	Range	Median	N[b]	Range	Median	N[b]	Range	Median
Priority pollutant organics												
Aldrin	16	<0.1	<0.01	27	<0.01-0.02	<0.01	24	<0.01	<0.01	19	<0.01	<0.01
Chlordane	16	0.10-0.30	0.10	26	<0.10-1.2	0.10	23	<0.10-0.30	0.10	19	<0.10-0.30	<0.10
DDE	16	<0.01-0.01	<0.01	27	<0.01-0.06	<0.01	24	<0.01-0.01	0.01	19	<0.01-0.03	0.01
DDT	16	<0.01-0.01	<0.01	27	<0.01-0.01	<0.01	24	<0.01	<0.01	19	<0.01	<0.01
Dieldrin	16	<0.01-0.01	<0.01	27	<0.01-0.02	<0.01	24	<0.01-0.01	<0.01	19	<0.01-0.02	<0.01
Endosulfan	16	<0.01-0.01	<0.01	27	<0.01	<0.01	24	<0.01	<0.01	19	<0.01-0.02	<0.01
Endrin	16	<0.01-0.01	<0.01	27	<0.01	<0.01	24	<0.01	<0.01	19	<0.01	<0.01
Lindane	16	0.01-0.06	0.03	27	<0.01-0.03	0.01	24	0.01-0.03	0.01	19	0.01-0.27	0.03
PCB	16	<0.10	<0.10	27	<0.10	<0.01	24	<0.10	<0.01	19	<0.10	<0.10
Phenol	5	13-35	18	9	6.0-41	16	9	6.0-52	17	5	8.0-500	20
Other organics												
Diazinon	16	0.11-1.1	0.27	27	0.06-8.1	0.22	24	0.13-18	0.39	18	0.14-3.3	0.53
Dibromochloropropane	4	<0.003-0.003	<0.003	7	<0.003-0.004	<0.003	8	<0.003-0.01	<0.003	7	<0.003-0.005	<0.003
Malathion	16	0.19-13	0.99	27	0.08-14	0.49	24	0.08-1.4	0.23	18	0.20-3.0	0.44
Methoxychlor	16	<0.01-0.19	<0.01	27	<0.01-0.02	<0.01	24	<0.01	<0.01	19	<0.01-0.03	<0.01
Methyl parathion	16	<0.01-0.03	<0.01	27	<0.01	<0.01	24	<0.01-0.03	<0.01	18	<0.01	<0.01
Parathion	16	<0.01-0.92	0.13	27	<0.01-2.5	0.06	24	<0.01-0.90	0.09	18	<0.01-0.38	<0.01
Silvex	16	<0.01-0.03	<0.01	26	<0.01	<0.01	23	<0.01	<0.01	19	<0.01-0.07	<0.01
2,4-D	16	<0.01-1.7	0.07	26	<0.01-3.7	0.08	23	<0.01-0.63	0.01	19	<0.01-3.2	0.03
Trithion	16	<0.01	<0.01	27	<0.01	<0.01	24	<0.01	<0.01	19	<0.01-0.10	<0.01

[a]The samples were analyzed for the following organics but concentrations were always less than the analytical detection limit: polychlorinated napthalenes, DDD, heptachlor, heptachlor epoxide, mirex, perthane, toxaphene, ethion, methyl trithion, methomyl, propham, sevin, 2,4-DP, 2,4,5-T.

[b]N = number of samples.

Source: Brown and Caldwell 1984.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

General Policies

b. Large areas within the plan boundaries which contain steep topography, expanses of tree cover, sensitive environmental or archeological features, or major recreational amenities shall be preserved as permanent open space. (NEW)

Commercial Land Use

1. General

g. Natural drainage courses shall be incorporated in landscape plans as surface drainage, dry creek courses, and retention basins.

Open Space

1. Drainageways Policies

a. A 100-foot wide undeveloped buffer zone shall be established along Carson Creek in accordance with Department of Fish and Game requirements. In this buffer, vegetation removal shall be for the purpose of drainage improvements.

b. Drainageway easements shall specifically preclude erection of structures and vegetation removal, except for drainage improvement, other site development not consistent with the purpose of these easements.

c. Drainageways located on privately owned property shall be within recorded easements which provide for routine maintenance and pedestrian access.

In addition to the Plan Policies listed above, the Specific Plan includes several other hydrologic mitigation features, which are listed below.

To safely and efficiently convey all stormwater from the Plan Area, a drainage system comprised of natural channels, retention ponds, and culverts (under streets) has been designed. Except as needed at road crossings, all storm drainage will be accomplished within existing natural, unaltered surface drainageways. It is the intent of this plan that storm channels be as natural in appearance as possible while serving the intended purpose of efficiently conveying storm drainage through and from the Plan Area.

The dense character of the Plan Area soil and the close proximity of bedrock to the surface will allow most existing drainageways to be left in a completely natural, unaltered condition. Riparian vegetation will be allowed to grow in channels to the extent that efficient functioning is not impaired. In limited instances where additional channelization is required to accommodate peak flows, channel banks will be graded to a slope of 4:1 or flatter. Channel width will vary to approximate a natural appearance. In areas where higher water velocities and turbulence are expected, such as on outside banks of curves and at culvert outfalls, natural or altered channels may require the addition of revetment material. In such instances, use of native stone rip-rap and gabion structures will be explored as a first choice. Poured cement will only be used where native stone cannot be effectively used.

The drainage plan includes a system of retention ponds designed to accept excess storm runoff during heavy storms and reduce downstream flows. Retention ponds will be irregular in shape and shallow in depth, with banks graded to a slope of 4:1 or flatter. Riparian vegetation will be allowed to grow where efficient functioning of the pond is not impaired. Where located in golf course areas, the ponds will be incorporated into the landscape design of the course.

Conveyance of storm drainage under streets will be accomplished through the use of corrugated steel pipes ranging in size from 42 to 72 inches in diameter, depending upon anticipated water volumes. Conveyance of drainage from streets and paved parking areas will be accomplished by means of open, asphalt, or concrete-lined swales and gutters. Catch basins will be used to intercept runoff from paved areas where it can be conveyed to the larger drainageways described herein. It is intended that closed culverts be used only to convey drainage under streets.

Mitigation Measures Recommendeded by the EIR Consultant

Avoid Long-Term Water Quality Impacts. Carefully manage pesticide, herbicide, and fertilizer use in all open space areas and golf courses. Maintain as much natural vegetation as possible in the retention ponds and swales within the golf courses to maximize natural filtering and recycling of nutrients.

Ensure Implementation of Drainage Facilities as Identified in Specific Plan. The County will need to monitor development plans for the various areas to ensure that all identified drainage facilities for each use are constructed at the same time as the use, even if the mitigation facility is located in an adjacent area which is not yet constructed.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to hydrology and water quality are included in Appendix I.

The county Subdivision Design and Improvement Standards Manual (pages 2-1, 25-29, and 44-50, May 1986) establishes strict drainageway design and erosion control criteria which must be met by the development.

Chapter 12

Vegetation, Wildlife and and Aquatic Resources

Introduction

The Vegetation, Wildlife and Aquatic Resources section presents a specific discussion of the plan area's biotic resources. The section examines the vegetation which currently exists in the Plan Area, the wildlife which inhabits the Plan Area and utilizes the habitat afforded by the vegetation and the aquatic resources (both vegetative and animal/fish, etc.) which are located in the Plan Area. The section organization presents an overview of the methodology used in evaluating the resources and a discussion of the basic habitats represented on the site. Each habitat is discussed from first the vegetation and, secondly, the wildlife standpoint.

The Plan Area supports habitats typical of the central Sierra Nevada foothills. Most of the Plan Area consists of undeveloped natural habitats, although large areas have been influenced by past mining and dryland farming, and livestock currently graze the pastures. A majority of the Plan Area supports a mosaic of grasslands and wooded habitats. Serpentine chaparral, riparian and pond habitats, and seeps and freshwater marshes are also present (Figure 12-1).

The Plan Area is located in a floristically significant portion of the central Sierra foothills (Wilson 1986). The region is known for its unique vegetation and high concentration of special-status plant species, most of which are entirely restricted to the vicinity of Pine Hill in El Dorado County. Pine Hill, and the surrounding region including portions of the Plan Area, are underlain by gabbro and serpentine substrates. The area's special-status plants are entirely restricted to the limited acreage of these chemically "harsh" soils in the county.

Six habitat types are identified in the Plan Area: annual grassland, blue oak woodland, live oak forest, freshwater marsh and seeps, serpentine chaparral, and the aquatic habitat at Bass Lake. These habitats are discussed in the following text.

It is important, while reading this section, to keep in mind the difference between the vegetation and wildlife components of each habitat discussed. The vegetation evaluation concentrates on the value of the plants from a strictly botanical perspective. The wildlife evaluation concentrates on the relative value of the various vegetation communities as a support system for wildlife (providing foraging, nesting, hiding and breeding locations) and describes the animal populations which utilize the various habitats. In this context it is

possible that loss of a habitat would constitute a significant adverse effect (because of local or regional scarcity and ecological value) even though the individual species of plants which make up the habitat, or animals which live there may not, in and of themselves, be endangered or rare. Therefore, this section evaluates the project from two distinct perspectives: vegetation and wildlife.

Methods

Descriptions of the Plan Area's biological resources are based upon a literature review, record search of the DFG Natural Diversity Data Base (NDDB), communications with knowledgeable individuals, and reconnaissance level field surveys. These sources were used to identify the important biological resources of the Plan Area, and to identify the special-status species and significant natural communities known or suspected from the Plan Area.

Field surveys were performed by Jones & Stokes Associates botanist and wildlife biologist on February 10 and 19, 1987, and by fishery biologists on February 19-20, 1987. All portions of the Plan Area were searched. Surveys were conducted to:

- o provide an overview of the Plan Area and describe the biological resource setting;
- o identify and map important biological resources;
- o determine which special-status species could possibly occur in the Plan Area; and
- o provide guidance in developing recommendations and policies for the Plan Area that could help to minimize impacts on biological resources and maintain some of the area's intrinsic natural values.

Searches for special-status plants were conducted for the Plan Area. The location and timing of surveys are provided later in this chapter.

A list of vascular plant, wildlife, and fish species observed in the Plan Area is available upon request from Jones & Stokes Associates. Consult Appendix C for the scientific names of plant, wildlife, and fish species identified in the text.

Annual Grassland (approximately 2,594 acres)

Annual grasslands occur over a large portion of the Plan Area. The present day acreage of grasslands probably exceeds historic levels because oak trees were removed in the past

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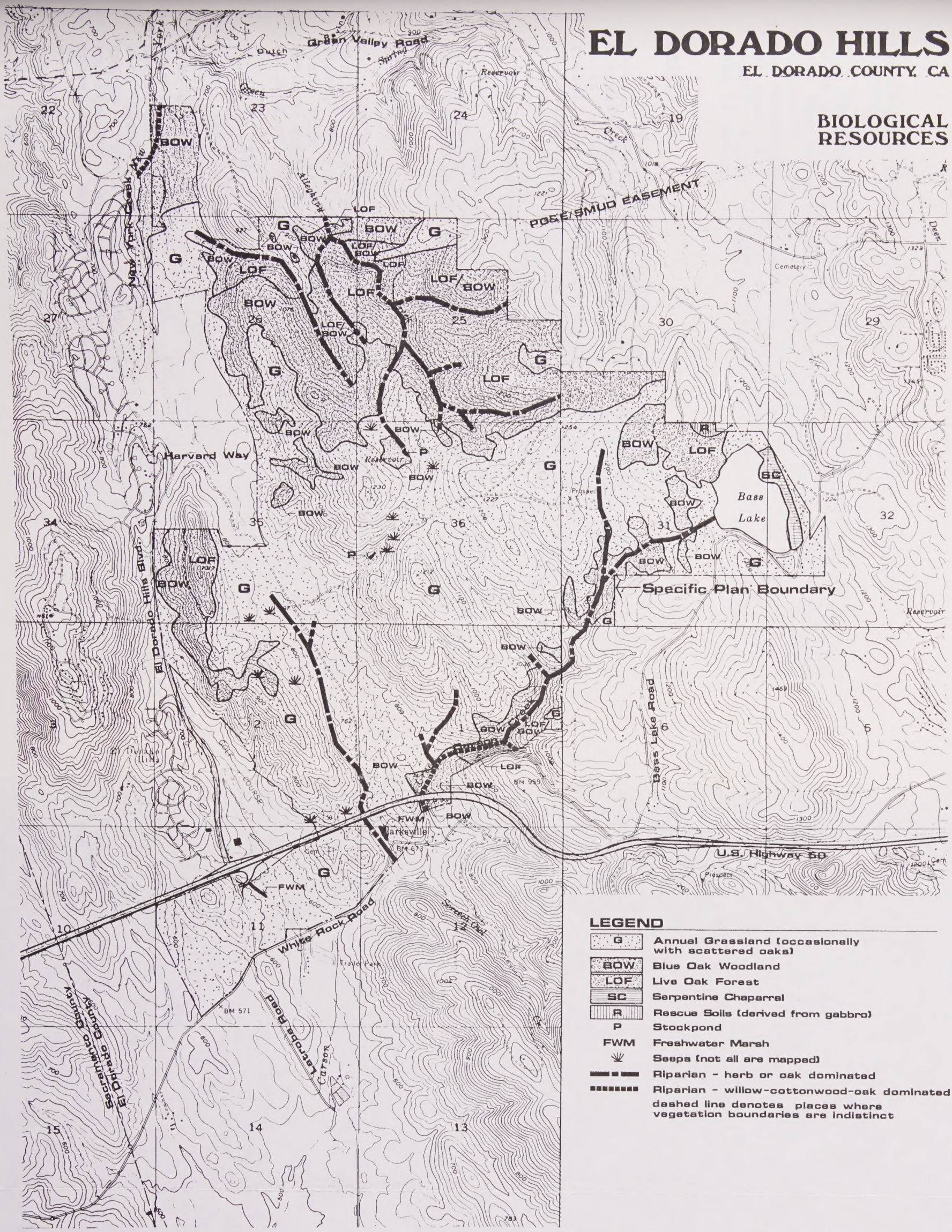
BIOLOGICAL RESOURCES



Owner

El Dorado Hills Investors, Ltd

3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner

Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 12-1.
BIOLOGICAL RESOURCES

possibly to enhance range productivity or to facilitate dryland farming.

The boundary between annual grasslands and blue oak woodlands is not distinct in some places because annual grasslands form the understory in blue oak woodlands and lone blue oaks frequently occur in the annual grasslands. These two habitats are recognized separately in this report to reflect the different plant and wildlife values of each. For the purpose of this report, annual grasslands refer to treeless openings greater than 10 acres.

Vegetation

Annual grasslands are characterized by a diverse mix of annual grasses and forbs. Introduced (non-native) grasses dominate the vegetation except on microsites with thin or rocky soils. Dominant grasses include soft chess, ripgut brome, foxtail barley, and wild oats. Interspersed throughout the grasslands are annual and bulb-bearing perennial forbs, the most common being members of the following genera: clover, popcorn flower, lupine, brodiaea, owls clover, goldfields, poppy, filaree, fiddleneck, and larkspur.

Bedrock outcrops occur on hill tops and along ridges. The presence of thin rocky soil promotes the development of a forb-dominated vegetation.

Wildlife

The grazed annual grassland of the Plan Area supports a few nesting avian species such as western meadowlark and horned larks. This plant community also provides foraging grounds for birds like lark sparrows, savannah sparrows, water pipits, and western kingbirds. These species do not breed in the grassland because of the lack of cover and suitable nesting substrate.

The shallow soils of the Plan Area are relatively inhospitable to burrowing rodents like pocket gophers, and the short, grazed grasses offer little cover for deer mice and California voles. These species probably occur in the Plan Area's grasslands, but at low densities. As a result, predators like black-shouldered kites, northern harriers, and red-tailed hawks are probably less abundant here compared to grasslands with abundant rodent populations. Rattlesnakes, common king snakes, racers, and gopher snakes, which similarly prey on rodents and other reptiles, are also likely to be relatively sparse in the annual grassland of the Plan Area.

Blue Oak Woodland (approximately 714 acres)

Blue oak woodlands occupy the arid and exposed sites in the Plan Area and are most common on steep south- and west-facing hillsides. Presumably this habitat was more extensive in the past, but decreased in acreage due to removal of oak trees for range improvement and farming.

Boundaries between blue oak woodlands and live oak forests are not always readily apparent. The vegetation grades imperceptibly from one type to the other, with the proportion of blue oaks gradually decreasing as live oak numbers increase. As a result, boundaries between these two oak-dominated vegetation types are sometimes mapped arbitrarily.

Vegetation

Blue oak dominates the canopy of this woodland habitat with digger pine interspersed throughout. Occasional interior live oaks can be found on more protected sites (e.g., small drainages). Blue oak woodland overstory cover ranges from about 5-50 percent in the Plan Area.

The blue oak woodland understory varies in the Plan Area. No shrub layer is present on the more arid sites where blue oak cover is low. Shrub cover increases on more protected sites such as along drainages or slopes with north or east aspects. Dominant shrub species include poison oak, buckbrush, toyon, and coffeeberry. Dense poison oak thickets occur at the edge of blue oak woodlands and live oak forests on some north-facing slopes.

Blue oak woodlands have an annual grassland herbaceous layer with some of the same species as are listed above for the annual grassland habitat.

Wildlife

The same wildlife species inhabiting the annual grassland also occur in the blue oak woodland. In addition to these grassland animals, oak-dependent species like acorn woodpeckers and scrub jays forage on insects and the acorns produced by the large blue oaks of the Plan Area. The foliage, limbs, and cavities in the blue oaks provide nesting opportunities for species like American kestrels, white-breasted nuthatches, western bluebirds, northern orioles, and western kingbirds. In addition to supplying foraging and nesting substrates for a number of bird species, these oaks offer shade for species such as mule deer, and cover and roosting sites for songbirds and raptors. Because of the food, cover, and nesting habitat provided by the blue oaks, these trees are considered important wildlife resources.

Live Oak Forest (approximately 577 acres)

Large areas of live oak forest occur in the north portion of the Plan Area on north- and east-facing slopes, in protected canyon bottoms, and along drainages. As with the blue oak woodland, this community was probably more extensive in the past, and boundaries between this habitat and the blue oak woodland are not always clear.

Live oak forests in the Plan Area may support the El Dorado bedstraw, a special-status plant species discussed later in this chapter entitled "Special-Status Plant Species".

Vegetation

Interior live oak dominates the canopy of this habitat. The term forest, as opposed to woodland, is used for this habitat because overstory cover exceeds 50 percent. Live oak forest cover in the Plan Area is typically 80-90 percent.

The interior live oak forest is represented by two subtypes in the Plan Area; one dominated by interior live oak and a second dominated by a mix of interior live oak and blue oak.

Pure interior live oak forests have dense, nearly closed, canopies; the shrub understory is sparse to dense and dominated by poison oak, buckeye, and toyon. Occasional yellow pine and digger pine occur on protected sites. Forests dominated by a mix of interior live and blue oak also have digger pine in the canopy. They are more open than pure live oak forests with canopy cover averaging 60-85 percent. The poison oak, snow berry, bedstraw, and toyon shrub layer is dense, and the herbaceous layer consists of an annual grassland vegetation.

Both forests types support a number of perennial herbaceous species associated with hardwood and conifer forests of higher elevation. These herbs are not typical of annual grasslands and include such species as sanicle, yarrow, and wood rush.

Along Carson Creek the live oak forest is very lush due to its location in a relatively deep canyon and the presence of a creek with water during most of the year. Buckeye is common on this slope, and the extensive moss-covered bedrock outcrops support a host of ferns and other plants typical of moist, shaded slopes.

Wildlife

The extensive oak forests of the Plan Area are floristically and structurally more diverse than the grassland and

blue oak woodland and therefore provide more food for wildlife. Acorns from the live and blue oaks support a diverse array of woodpeckers, including northern flickers and acorn, Lewis', Nuttall's, and downy woodpeckers. Insects in the oak foliage attract plain titmice, bushtits, ruby-crowned kinglets, and Hutton's vireos. Oak-dependent fungi, lichen, mistletoe, and galls provide food for California voles, gray squirrels, raccoons, and mule deer. The shrub understory of toyon and poison oak and the insect-rich leaf litter attracts ground foragers like California quail, wild turkeys, white-crowned sparrows, dark-eyed juncos, and rufous-sided towhees.

This plant community also offers shade, shelter, and nesting substrate for wildlife. Woodpeckers excavate nest holes in living and dead oaks, and these cavities are subsequently used by other hole-nesting species. Species that use the open grassland for foraging in the day return to oaks at night to roost. Deer and many birds spend the hottest part of summer days resting in the dense shade of the oak canopy.

The live oak forest of the Plan Area is especially valuable for wildlife because of its extensive, contiguous nature, its proximity to large open spaces of blue oak woodland and annual grassland, and its relative freedom from human disturbance. These expansive open spaces support resident species with very large home ranges (e.g., red-tailed hawks, golden eagles, mule deer, bobcats, coyotes). Because of these many wildlife resources, the extensive live oak forest is the most important wildlife habitat in the Plan Area.

Creekside

Creekside habitats are quite variable in the Plan Area due to differences in mining history, location in the watershed, seasonal availability of surface water, and livestock grazing. This variation influences the structure and composition of vegetation in the creekside habitat. As a result, vegetation of creekside habitats ranges from being composed primarily of riparian-dependent species (e.g., cottonwood, willow, alder, wild grape) to species typical of the adjacent live oak forests (e.g., interior live oak and buckeye) and annual grasslands.

Nearly all creek channels in the Plan Area were modified in the past by placer mining. This activity removed the vegetation and altered the amounts and composition of rooting substrates along the creek. Sand and silt deposits decreased while the proportion of cobble-dominated substrate and exposed bedrock increased. These activities tend to reduce a creek's ability to support riparian-dependent vegetation because suitable rooting substrate is decreased or absent.

Location in the watershed and seasonal availability of water determines the amount of riparian-dependent vegetation

along the creeks. In the Plan Area, the upper portions of watersheds, and creeks without year-round surface flow, tend to be dominated by live oak forest or annual grassland vegetation, sometimes with small amounts of riparian-dependent species intermixed.

Livestock grazing reduces the value of creekside habitats because cattle spend a disproportionate amount of time in this habitat and trample and remove riparian-dependent vegetation. Livestock are attracted to creekside habitats because of the presence of shade, and a more luxurious vegetation that remains green later in the spring. As a result, the vegetation in creekside habitats is overutilized in proportion to that of adjacent uplands. Young cottonwoods, willows, and other riparian-dependent species are a favored food of livestock, therefore riparian-dependent vegetation is most severely impacted by this overutilization. Given sufficient time most or all riparian-dependent vegetation can be eliminated by livestock grazing.

The relationship between cattle grazing and riparian vegetation can be observed west of the Plan Area where a dense, young cottonwood-willow riparian vegetation has developed along the creek in the ungrazed golf course. Along the same creek, in adjacent grazed pastures north and south of the golf course, virtually no riparian-dependent vegetation is present. The recovery of riparian-dependent vegetation can also be observed on the residential lots west and adjacent to New York Creek.

Creekside habitats with riparian-dependent vegetation are important natural resources because of:

- the present-day scarcity of intact riparian vegetation;
- the importance of riparian vegetation and associated habitats to dependent plant and wildlife species; and
- the contribution intact riparian vegetation and habitats make toward maintaining water quality.

Most creekside habitats in lowland California are degraded by livestock grazing and other land uses, further increasing the rarity of this community and the relative value of the remaining intact occurrences.

Vegetation

Allegheny Creek and its tributaries in the northern portion of the Plan Area support very little riparian-dependent vegetation. This lack of vegetation is primarily due to past mining, a lack of year-round water, and ongoing livestock grazing. These creeks support oak forests, oak woodlands, or annual grasslands up to the creek edges. When present along creeks, oak tree dominated vegetation is dense with nearly closed

canopies dominated by interior live oak, blue oak, and buckeye. Occasional valley oak, cottonwood, California grape, and willow are scattered, but rare, along these creeks. Two small sites along Allegheny Creek have notable stands of cottonwood/willow/Himalaya-berry vegetation (Figure 12-1). The presence of the two stands of riparian-dependent vegetation and the occasional valley oaks, cottonwoods, and willows along the rest of the creek, indicates that Allegheny Creek may be capable of supporting more extensive riparian-dependent vegetation.

Carson Creek supports an intermediate type of creekside vegetation with the riparian dependent cottonwood, willow, and buttonbush species mixing with interior live oak, blue oak, and buckeye. The canopy is nearly closed and riparian-dependent species contribute about 40 percent of total cover. Because water is present most or all of the year, riparian herbs such as beardgrass, deer grass, and spike rush are also present. The channel is very rocky with numerous large boulders and bedrock outcrops. These features reduce accessibility to livestock and may account for the increased amount of riparian-dependent vegetation.

The north branch of Carson Creek that drains Bass Lake has considerably less riparian-dependent vegetation than the main branch. Willows and buttonbush are only occasionally present with interior live oak and buckeye the most common species along the creek edges; reaches with annual grasslands and no woody vegetation are common. Compared with the main branch, this branch has less water and is more accessible to livestock because the large bedrock exposures and boulders are absent. These characteristics may help to explain the lower amounts of riparian-dependent vegetation.

The creekside habitat with the most highly developed stand of riparian-dependent vegetation is west of the Plan Area along the small unnamed creek flowing through the existing golf course. This creek has a small watershed and no surface flow was observed above the golf course. The creek's vegetation consists of a 40- to 50-foot tall canopy of young cottonwoods, a dense mid-story layer of various willow species and alders, and a dense impenetrable understory of Himalaya berry, wild grape, and poison oak. Golf course irrigation probably augments natural creek discharge. This feature, and the absence of livestock grazing, probably account for the well-developed young stand of riparian vegetation. Presumably, this riparian-dependent vegetation was not present before the golf course increased creek discharge and the livestock grazing was terminated.

Wildlife

Allegheny Creek has few of the wildlife values usually associated with creekside habitats because of the effects of livestock grazing and past mining activities and because of its intermittent water flow. In general, the corridor along

Allegheny Creek has the same wildlife resources and qualities of the surrounding live oak forest. The two areas of riparian vegetation along Allegheny Creek contribute additional feeding and nesting resources for wildlife.

Carson Creek's creekside corridor supports fewer riparian trees and a lesser shrub understory than the creek near the golf course. Although it is not as lush or productive as that creek, it does provide important cover, foraging, and breeding habitat for many animals. The moist, shaded canyon of Carson Creek attracts black phoebes, belted kingfishers, opposums, striped skunks, raccoons, mule deer, western rattlesnakes, and Pacific tree frogs. The riparian trees and shrubs intermingled with dense live oaks and buckeye provide foraging and nesting habitat for gray squirrels and woodrats, and for songbirds like Bewick's and house wrens and rufous-sided and brown towhees.

The creekside habitat at the western border of the Plan Area at the existing golf course is productive, valuable wildlife habitat. Ample food from poison oak berries and blackberries, aquatic and terrestrial insects, as well as water, cover, and shade, attract a variety of wildlife species. Birds likely to nest here include Bewick's wren, scrub jab, Anna's hummingbird, downy woodpecker, rufous-sided towhee, and several species of warblers. Migrant birds in spring and fall would also find food and cover in this dense vegetation. Opossum, raccoon, striped skunk, and long-tailed weasel use the riparian habitat for cover and foraging, especially during the hot summer. Pacific tree frogs and bullfrogs breed in the creek and are preyed upon by common garter snakes.

The irrigated and landscaped grounds of the golf course adjacent to the riparian corridor are also used as a wildlife resource, although relatively few species are able to extensively use this artificially created habitat. Yellow-billed magpies, Brewer's blackbirds, and European starlings forage for invertebrates on the well-watered lawns. At night, mule deer and cottontails emerge from the riparian zone to browse on shrubbery. Generalist species like scrub jays and American crows may nest in the introduced trees of the golf course.

Freshwater Marshes, Seeps, and Stockponds

These wetland habitats are uncommon in the Plan Area. Several small seeps, totaling less than 2 acres, are scattered on hillsides in the annual grasslands and blue oak woodlands. The two freshwater marshes total less than 2 acres. Several small stock ponds are scattered in the Plan Area.

Marsh and seep habitats are of special importance because of their value to dependent wildlife and plants and due to the

current scarcity of these habitats compared with their past extent.

Vegetation - Freshwater Marshes

Freshwater marshes are characterized by year-round surface or subsurface water that supports an herbaceous flora of emergent aquatic vegetation. Cattails and tules dominate this habitat in the Plan Area. Rushes, smartweed, curly dock, and ludwigia are also typical. Occasionally lone willows and cottonwood are present; these species would probably be more common if livestock grazing were reduced or eliminated.

Vegetation - Seeps

Seeps have vegetation similar to marshes but lack cattails and tules. Seep vegetation is dominated by various annual grasses (e.g., rabbitfoot and foxtail grasses) and a mix of forbs such as curly dock, smartweed, cut-leaved geranium, and watercress.

Vegetation - Stockponds

Freshwater marsh and seep vegetation occurs around pond edges. Additional aquatic plants such as pond weed or ludwigia may also be present.

Wildlife - Freshwater Marshes

The two small marshes of the Plan Area are rich, productive habitats. They attract nesting birds like song sparrows, marsh wrens, and red-winged blackbirds. Bullfrogs and tree frogs breed in the standing water and are prey for great blue herons, great egrets, common and aquatic garter snakes. These small marshes might provide nesting habitat for the tricolored blackbird, a species of concern to the U. S. Fish and Wildlife Service (USFWS). These freshwater marshes are limited in extent, but they are valuable wildlife resources of the Plan Area, particularly in light of the regional and statewide scarcity of such wetlands.

Wildlife - Seeps

The seeps scattered through the Plan Area are of reduced value to wildlife because they are trampled and disturbed by cattle. Water pipits, horned larks, killdeer, Lincoln and savannah sparrows might forage in the wet soils near the seeps.

Wildlife - Stockponds

Stockponds in the Plan Area are similarly degraded by livestock grazing. These turbid ponds may provide resting and foraging grounds for mallards and great blue herons and are also a source of water for mule deer and other mammals and birds. The wildlife value of the stockponds is substantially reduced because they lack riparian or emergent vegetation.

Bass Lake (approximately 154 acres)

A large year-round lake at the east edge of the Plan Area has special value as wildlife habitat.

Vegetation

Vegetation at Bass Lake consists of a few scattered cottonwoods and willow trees and herbaceous species listed previously for the freshwater marshes and seep habitats.

Wildlife

Because of its fluctuating water levels, Bass Lake does not support any important stands of emergent or riparian vegetation, but it does provide foraging and resting grounds for a variety of waterfowl. Common mergansers, ruddy ducks, buffleheads, and American wigeons use Bass Lake in the winter. Great blue herons, great egrets, and killdeer forage along the muddy margins of the lake, and black phoebes, tree and violet-green swallows flycatch for insects above the lake's waters. Bass Lake is also a source of water for mammals like raccoons, striped skunks, and mule deer.

Serpentine Chaparral (approximately 39 acres)

A small area with serpentine substrates and derived soils is present along the east edge of the Plan Area east and adjacent to Bass Lake. Serpentine substrates are common east and north of the Plan Area (Rogers 1974).

Soils derived from serpentines are nutritionally poor and present a stressful habitat for plant growth due to the presence of toxic metals and thin soils. As a result, the vegetation differs in structure and composition from surrounding non-serpentine substrates.

Serpentine is famous in California because many special-status plant species are restricted to the substrate. In El Dorado County eight special-status species are associated with serpentine and the related gabbro substrates (Wilson 1986, Smith and York 1984). None of these species occur in the Plan Area on

the limited exposures of serpentine and gabbro substrate. These special-status plants are discussed in detail below in the section entitled "Special-Status Plant Species".

Vegetation

Most of the serpentine substrate in the Plan Area has been disturbed by heavy equipment. This has altered the natural vegetation which is in early stages of recovery. Presumably a dense chaparral, with herb-dominated openings in extremely rocky sites, was present. Today the vegetation consists of a young chaparral of buckbrush, white-leaved manzanita, and yerba santa with a patchy overstory of digger pine. A rich, diverse herb layer is present.

Wildlife

The shrubs and herbaceous vegetation of the disturbed chaparral in the Plan Area provide food and cover for birds like California quail, rufous-sided and brown towhees, and wrentits. The buckbrush and manzanita of the chaparral is a favored food of mule deer and other browsing mammals. Unlike the serpentine plant community, no rare or sensitive animal species are associated with this unusual substrate.

Aquatic Resources

Aquatic habitat in the Plan Area consists of Bass Lake and several small ephemeral reservoirs and intermittent streams. Bass Lake and possibly a few pools in Carson and New York Creeks comprise the only permanent aquatic habitat within the Plan Area.

Bass Lake is a small domestic water supply without public access. The lake provides habitat for largemouth bass, channel catfish, bluegill, green sunfish, red-ear sunfish, and golden shiner. The DFG occasionally stocks other reservoirs with bass produced in Bass Lake.

Fish populations in the few small ephemeral reservoirs in the Plan Area are unknown. Fish cannot, however, survive summer conditions in these reservoirs. Fish could be present on a seasonal basis if introduced during the winter.

Streams in the Plan Area fall within the California Roach Zone described by Moyle (1976). Streams characteristic of this zone are small warm tributaries to larger streams or reservoirs and flow through open foothills of oak woodland. During the summer fish are confined to stagnant pools that may exceed 30° C during the day. Native California roach or green sunfish are the predominant species. These streams can be used by other

fishes migrating upstream to spawn during the winter and spring. Sacramento sucker, Sacramento squawfish, native minnows, and salmonids commonly use these types of streams for spawning. Fish can survive throughout the summer if pools are sufficiently large and deep. Some of these species may use the extreme lower portions of New York Creek outside of the Plan Area; private property precluded sampling this area.

Biologists surveyed representative reaches and sampled 185 m, 50 m, and 30 m of Carson Creek, New York Creek, and Allegheny Creek, respectively, using electrofishing gear. Fish sampling sites are shown in Figure 12-2. Carson Creek is the largest stream in the Plan Area (February 1987 flow estimated at 2 cubic feet per second [cfs]). The north branch of Carson Creek near Bass Lake consists of a small, narrow, low-gradient channel lacking fish habitat. The main branch is steep with plunge pools up to 1 m deep and cascades. Substrate consists primarily of bedrock and cobble. A few pools in this segment may hold water year-round. Lower Carson Creek again becomes low gradient with poor fish habitat. There is little cover and silt and cobble substrates are predominant. Only one small (25-mm) green sunfish was sampled and one dead bluegill was found. No other fish were observed or sampled. The culvert under U. S. Highway 50 precludes any seasonal fish migrations into the Plan Area.

New York Creek flows north along the northwestern boundary of the Plan Area, and eventually flows into Folsom Lake. The flow was estimated at 1.5 cfs. The low-gradient creek along the boundary supports dense riparian vegetation and the habitat is primarily narrow, shallow runs with occasional small pools. Cobble and boulder substrates are dominant. Pools constructed by local residents may hold water year-round. Seven green sunfish ranging from 104-171 mm total length and three bluegill measuring 110, 118, and 120 mm total length were sampled. Eight of these fish were captured in a man-made pool. Several crayfish were sampled as well. Lower New York Creek near Folsom Lake support spawning and juvenile rearing of several species of trout and chinook salmon.

Allegheny Creek is a small stream (flow estimated at less than 1 cfs) in the Plan Area. Green Springs Creek provides additional flow to Allegheny Creek outside of the Plan Area. Allegheny Creek eventually flows into New York Creek. Allegheny Creek is a narrow stream with few pools. Cobble and small boulder substrates are dominant. Fish were not captured or observed during sampling.

Stream habitat suitable for fish production is limited in the Plan Area. Only a few small bluegill and green sunfish were captured during the winter when conditions were optimal. It is unknown whether even these hardy fish can survive average summer conditions; populations may be maintained or augmented by "backyard" stocking by local residents.

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FISH SAMPLE SITES

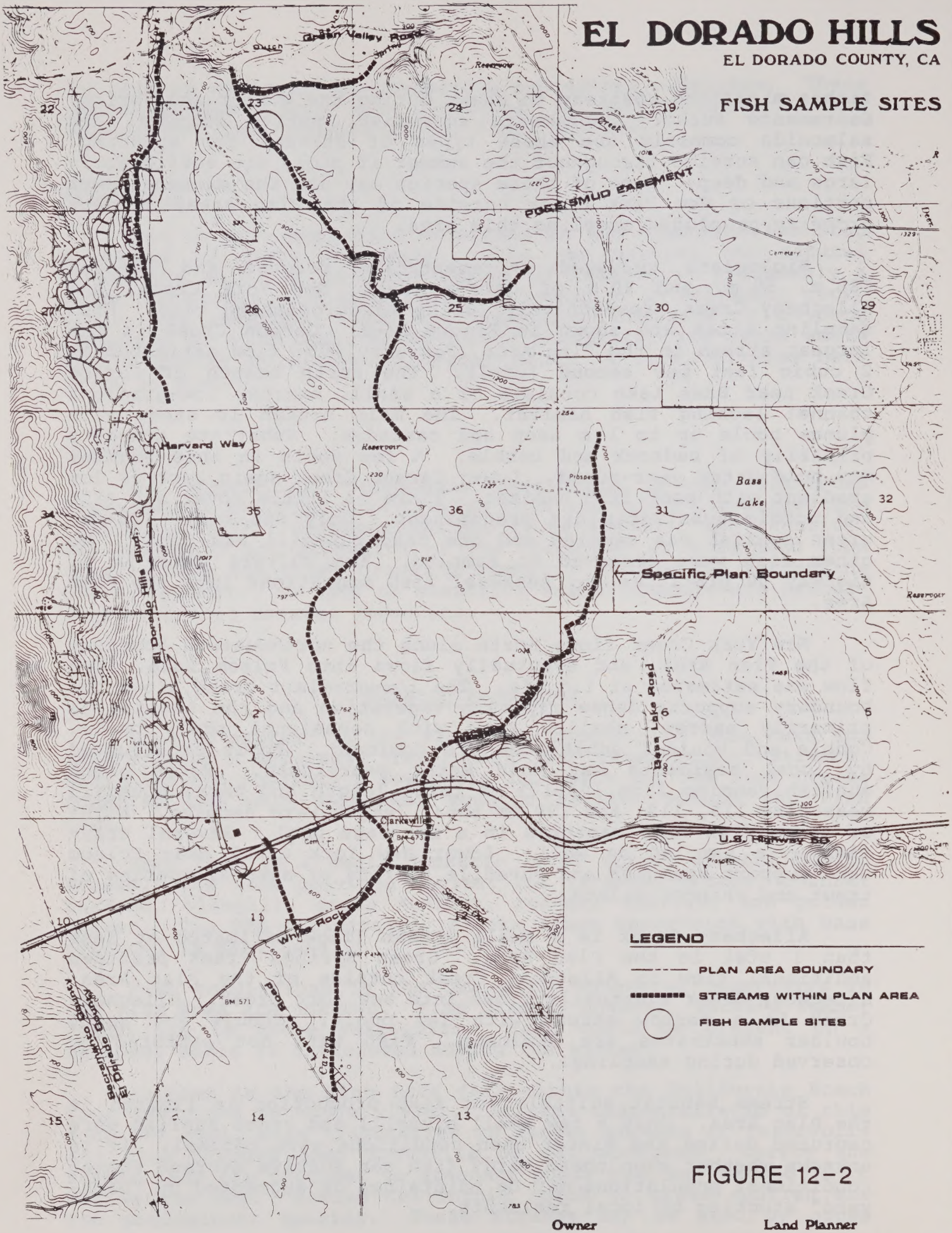

FIGURE 12-2

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

Special-Status

Plant Species

Numerous special-status plant and animal species are known from El Dorado County. Development in the Plan Area could potentially impact special-status species because of the habitat disturbance and elimination associated with development projects. No special-status plant species were found during the field surveys conducted in May-June 1987.

Special-status plants are defined to include:

- California rare, threatened, or endangered species (California Department of Fish and Game 1986),
- Federally listed, proposed, or candidate threatened or endangered species (50 Federal Register 39526, 1985), and
- California Native Plant Society rare and endangered species (Smith and York 1984).

A list of special-status plants that could have possibly occurred in the Plan Area was compiled (Table 12-1) using the data and information contained within the NDDB data base record search (1987), Smith and York (1984), California Native Plant Society (1986), Wilson (1986, pers. comm.), and Van Ess (pers. comm.). This list was used as a target list for special-status plant species surveys in the Plan Area.

El Dorado County is known, or suspected, to support several special-status plants that are restricted to vernal pools (including *Chamaesyce hooveri*, *Gratiola heterosepala*, *Juncus leiospermus*, *Legenere limosa*, *Orcuttia tenuis*, *O. viscida*, and *Tuctoria greenei*). No vernal pools are present in the Plan Area; consequently, these species are not included in Table 12-1 or suspected to occur in the Plan Area.

All but one (*Galium californicum* subsp. *sierrae*) of the special-status plant species listed in Table 12-1 are restricted to serpentine or gabbro substrates. Small amounts of both substrates are present at the northeast edge of the Plan Area. These areas required surveys to:

- determine if special-status plants are present;
- to assess potential impacts; and
- to recommend mitigation.

Table 12-1. Special-Status Plant Species Suspected to Occur in the El Dorado Hills Plan Area

Species	Status[a] State	Status[a] Federal	Status[a] CNPS	Known Geographic Range	Habitat Associations	Period of Identification
Calystegia stebbinsii Stebbins' morning glory	LE	C2	1b	Foothills of El Dorado County	Open bare ground in chaparral and woodlands on gabbro substrates	June
Ceanothus roderickii Pine Hill ceanothus	LR	C2	1b	Pine Hill area in El Dorado County	Gabbro substrates on open chaparral slopes and disturbed chaparral openings	May - July
Chlorogalum grandiflorum Red Hills soaproot	--	C1	1b	Foothills of Tuolumne and El Dorado Counties	Open rocky slopes on serpentine substrates	May - June
Fremontodendron decumbens Pine Hill flannel bush	LR	C2	1b	Pine Hill area of El Dorado and Yuba Counties	Chaparral and forest openings on gabbro substrates	Year-round
Galium californicum subsp. sierrae El Dorado bedstraw	LR	C2	1b	Pine Hill area of El Dorado County	Shaded, densely wooded, north facing slopes in chaparral and live oak dominated forests	May - July
Helianthemum suffrutescens Bisbee Peak rushrose	--	C2	1b	Foothills of Amador, Calaveras and El Dorado Counties	Chaparral, not restricted to gabbro substrate	April - May
Senecio layneae Layne's butterweed	LR	C2	1b	Foothills of El Dorado County	Open slopes in chaparral, oak woodlands, and pine forests below 3,000 ft on serpentine and gabbro substrates	May
Wyethia reticulata El Dorado County mule ears	--	C2	1b	Pine Hill area of El Dorado County	Shaded or open slopes in chaparral oak woodlands and pine forests on gabbro substrates	May - July

Federal = U. S. Fish and Wildlife Service (50 Federal Register 39526-39584, September 27, 1985)
C1 = A "Candidate" species under review for federal listing. "Category 1" includes species for which the USFWS presently has substantial information on biological vulnerability and threats to support the appropriateness of proposing to list them as endangered or threatened species." Proposed rules are anticipated for these taxa, but may be delayed for some years because of further research needs, the large number of taxa under review, and limited staffing.
C2 = A "Candidate" species under review for federal listing. "Category 2" includes species for which the USFWS presently has some information indicating that "proposing to list them as endangered or threatened species is possibly appropriate," but for which further biological research and field study is usually needed to determine biological vulnerability and threats.
Note: "Category 2" species are not necessarily less rare or less threatened than "Category 1" species. The distinction relates to the amount of data available and is therefore administrative rather than biological.

State = California Department of Fish and Game (1985).
LE = Listed as "Endangered" under the state Endangered Species Act (1986).
LR = Listed as "Rare" under the state Endangered Species Act (1986).

CNPS = California Native Plant Society (Smith and York 1984).
1b = Considered rare or endangered in California and elsewhere, if present outside California (probably meets criteria for state listing).

Adequate surveys for special-status plants were conducted during the time of year when positive identification can be made, typically during the flowering period.

Galium californicum subsp. sierrae may not be restricted to serpentine or gabbro substrates. The available habitat information indicates it could occur in the live oak forests of the Plan Area (Wilson pers. comm., Van Ess pers. comm.). This species is identifiable during May-July. Surveys of the live oak forests were conducted during this time period to determine if this subspecies is present.

Wildlife Species

Wildlife discussed in this section include animals which are of concern because of their game status (i.e., mule deer) and those designated as sensitive, endangered, or candidates for endangered or threatened listing by the DFG or the USFWS.

Tricolored Blackbirds. The USFWS has designated this marsh-nesting species as a candidate category 2 species (Table 12-1). Tricolored blackbirds typically nest in colonies in freshwater marshes of the Central Valley and have also been recorded nesting in the Sierran foothills. No tricolored blackbirds were observed during the field surveys, but they might breed in the marshes of the Plan Area.

Southern Bald Eagle. The DFG and the USFWS have designated the bald eagle as an endangered species. These fish-eating raptors winter in small numbers at nearby Folsom Lake. In California, bald eagle nesting areas are concentrated in the northeastern portion of the state. They do not breed in or near the Plan Area but may feed at the reservoirs or may be seen flying overhead.

Peregrine Falcon. The DFG and the USFWS have designated the peregrine falcon as an endangered species. Peregrine falcons are very wide-ranging raptors that might infrequently occur in the Plan Area. The Plan Area and its surroundings do not include any suitable breeding habitat for this species.

Mule Deer. Mule deer are a game species and their populations in California are monitored by the DFG. The Plan Area supports an undetermined number of resident deer. It is not an important area for migratory or wintering deer herds (Mapes pers. comm.). The most important habitats for mule deer in the Plan Area are the creekside habitats and the extensive oak forest.

Impacts

Project Design Assumptions

The impacts are based upon a buildout of the Plan Area as depicted on the Specific Plan dated May 29, 1987. Approximately 75 percent of the 4,086-acre Plan Area would be developed and 25 percent set aside in nondevelopable open space. The impact assessment is based upon the following assumptions:

- In the absence of specific quantification or commitments, beyond those included in the Specific Plan and Design Guidelines, detailing mitigation techniques we have assumed maximum level of disturbance to generate a "worst-case" analysis under the following assumptions.

- Commercial land uses, schools, and the community center require the removal of all grassland vegetation and 80 percent of the canopy cover of oak woodlands and forests onsite vegetation on 347 acres or 8.5 percent of the 4,086-acre Plan Area. Portions of these areas would be subsequently landscaped.

- Major roads require the removal of all vegetation on 139 acres or three percent of the Plan Area.

- Residential land use would occur in 2,184 acres or 53.4 percent of the Plan Area:

  - on residential lots less than 1 acre in size, house and driveway construction would remove an estimated 15 percent of the oak tree canopy cover in sparse blue oak woodlands and 25 percent of the cover in dense blue oak woodlands and live oak forests;

  - on residential lots greater than 1 acre, house and driveway construction would remove 10 percent of the oak tree canopy cover in sparse blue oak woodlands and 15 percent of the cover in dense blue oak woodlands and live oak forests;

  - landscaping on private lots with blue oak woodland or live oak forest vegetation would remove an estimated additional 25 percent of oak tree cover on lots less than 1 acre and 10 percent on lots greater than 1 acre;

  - an estimated additional 25 percent of the oak trees that remain after construction and landscaping would potentially be gradually lost because oak tree survival rate is low due to improper treatment (e.g., overwatering) and mechanical harm; and

- additional landscaping related impacts include the loss of nearly all grassland and shrub vegetation on lots with woodland or forest vegetation.

o The two proposed golf courses would encompass 370 acres, or 9 percent, of the Plan Area. Construction and landscaping in these areas would remove most or all native vegetation and degrade or eliminate creek channels; the golf courses would subsequently be landscaped with a turf lawn, scattered trees, and "hedge rows" of trees and shrubs.

o Parks are planned for 26 acres, or 0.6 percent, of the Plan Area. Natural vegetation would be replaced with turf lawns and ornamental trees and shrubs.

o Open space is set aside in 1,020 acres, or 25 percent, of the Plan Area. This land use would be managed for the retention and maintenance of existing native vegetation, except where fire prevention would require deviation from this objective.

o It is not possible to predict how much or what type(s) of native vegetation would be protected in "residential open space" as designated in the Specific Plan because these areas would not be established and dedicated until individual "villages" are developed.

It is important to note that future major changes in the planned development such as increasing the acreage of schools or park land could alter the acreage figures and impact assessments presented below.

Implementation of the Specific Plan would result in impacts to annual grassland, blue oak woodland, live oak forest, riparian, seep, and freshwater marsh vegetation communities (Figure 12-3) in the Plan Area (Table 12-2). Native vegetation would be eliminated or partially modified within this acreage as described below. Native vegetation on 1,020 acres would be slightly modified or undisturbed in open space designation.

Open Space Management

Vegetation

Several impacts associated with open space management can negatively influence vegetation and wildlife resources in the native, residential, and drainageway open space proposed for the Plan Area. The impacts to vegetation include: the effects of management for reduction of fire hazard, vegetation removal for access roads and interruption of the natural regeneration. Wildlife impacts include: habitat degradation associated with the vegetation impacts listed above, "harassment" of wildlife,

Table 12-2. Acreage by Habitat Type Under Preproject and Postproject Conditions

Habitat Type	Preproject		Postproject																				
									Impacted by Improvements Within Designated Development Areas[a]														
			Open Space			Included Within Designated Development Areas			Residential (1 ac lots)		Residential (1 ac lots)												
	Acres	Percent of Plan Area	Acres	Percent of Plan Area	Percent of Habitat Type	Acres	Percent of Plan Area	Percent of Habitat Type	Immediate Impacts[c]	Long-Term Impacts[c]	Immediate Impacts[c]	Long-Term Impacts[c]	Sub-Total	Commercial	Golf Course	Parks[b]	School	Community Center	Major Streets	Retention Ponds	Sub-Total	Total	Percent of Habitat Type
Annual Grassland	2,594	63.5	483	11.8	18.6	2,110	51.7	81.3	1,333	--	117	--	1,450	260	228	10	46	27	94	16	681	2,131	82.2
Blue oak woodland	714	17.5	214	5.2	30.0	500	12.2	70.0	155	81	25	18	279	--	58	--	14	--	35	--	107	386	54.1
Live oak forest	577	14.1	129	3.2	22.3	448	11.0	77.6	54	27	58	59	198	--	84	--	--	--	10	13	107	305	52.8
Marsh and Seep	<2	<0.05	>1 acre	--	--	<1 acre	--	--	>1	--	--	--	>1	--	--	--	--	--	--	--	--	>1	--
Serpentine Chaparral	39	1.0	39	1.0	100.0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rescue Soils	6	0.1	0	0	0	6	0.1	100.0	6	--	--	--	6	--	--	--	--	--	--	--	--	6	0.1
Bass Lake	154	3.8	154	3.8	100.0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTALS	4,086	100.0	1,020	25.0		2,882	75.0		1,549	108	200	77	1,934	260	370	10	60	27	139	29	895	2,829	

a Extent of impact is presented as the percent of canopy removed and is based on assumptions presented in the text. Based on these assumptions, not all oak trees within designated development locations are removed.

b Park locations are undetermined at this time except for a 10-acre park at the Community Center/Village Green.

c Immediate impacts result from construction and landscaping activities, while long-term impacts result from the gradual death of trees from improper care and future improvements. This category is only applicable to live oak forest and blue oak woodland communities.

EL DORADO HILLS

EL DORADO COUNTY, CA

PLANT COMMUNITIES RELATIVE TO LAND USES

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

FIGURE 12-3.
PLANT COMMUNITIES RELATIVE TO LAND USES

and obstruction of wildlife movement. Each of these topics is discussed separately below.

Management of Vegetation to Reduce Fire Hazard

Once project construction begins, the necessity of reducing fire hazard on the site will receive increasing emphasis. The management techniques proposed in the specific plan include controlled burns, planting of non-native plants, herbicide application, and clearing of fire breaks. Continued grazing is an option not addressed in the specific plan.

Controlled Burns. In areas of dense vegetation and steep slope, the use of controlled burns can present a potentially dangerous solution. Even with the presence of trained personnel, such activities can cause uncontrolled outbreaks of fire. Once residences are constructed, the potential threats to lives and property would increase.

Planting of Non-Native Plants. The planting of non-native plants to reduce fire hazard would involve large scale irrigation and replantings. Non-native vegetation, while providing decreased fuel and combustible material, would require ongoing maintenance and artificial irrigation to ensure its survival. Both the introduction of such species and the irregation necessary to sustain them could, of themselves, alter and degrade existing habitat values for both plants and wildlife. The initial and maintenance cost and relatively low probability of ensuring success also detract from the value of this option.

Herbicide Application. The use of herbicides, while effective, could serve to create areas of insufficient vegetational coverage to resist erosion, especially on the steep slopes contained in open space. The drift of herbicides during application could also affect adjacent native plants and domestic landscaping and there is a resistence among the general public concerning herbicide use near residential areas.

Clearing of Fire Breaks. The clearing of fire breaks would require grading and/or discing in areas of steep slopes. This activity is, however, effective and with proper attention to drainage, would not necessarily contribute to increased erosion.

Continued Grazing. The continuation of grazing at present levels would serve to minimize the growth of flammable grasses and long-term accumulation of dead grasses and mulch. This ongoing activity has not contributed significantly to erosion, however, grazing would require the provision of a water source and some form of fencing. The provision of water could benefit local wildlife while fencing, properly installed, would not preclude the movement of wildlife.

In summary, each of these methods to control shrub and herb vegetation could adversely affect habitats in open space and could convert native vegetation to invasive non-native types and/or create increased erosion. Furthermore, any reductions in potential fire hazard gained by Open Space Management could be negated by the conditions of private lands and residential open space where active management to reduce fuel loads would not be occurring.

The impact of vegetation management techniques discussed above are considered potentially significant to vegetation and wildlife resources. To reduce to a less-then-significant level, the Specific Plan Open Space Plan should be augmented by guidelines to ensure that vegetation and wildlife values are optimized in open space areas.

A measure listed in the Specific Plan calls for detailed studies where vegetation encroachment is occurring due to native biological succession to determine the appropriate corrective measure necessary to reduce fire hazard. This proposal could reduce the potential impact of vegetation disturbance of open space habitats to a less-than-significant level if the corrective measure(s) selected ensures the native perpetuation and regeneration of native vegetation currently existing in open space areas.

Vegetation Removal

Another potential problem with open space relates to a proposal to build dirt roads for fuel breaks and access. This impact is considered potentially significant to vegetation and wildlife resources. To reduce to a less-than-significant level, the Specific Plan Open Space Plan should be augmented by guidelines indicating the location of fire access roads.

Natural Regeneration of Existing Vegetation

Several types of open space are proposed: native, drainageway, and residential. The main objectives of open space are to provide habitat for dependent wildlife and vegetation, preserve aesthetic and visual resources, and provide sites for passive recreation use. These objectives can be achieved if vegetation in open space is allowed to regenerate naturally and if disturbed areas are allowed to recover.

Nature provides the conditions required for native site recovery and vegetation regeneration, but certain land uses can detract from this process. Frequent or unnaturally intense fires, fires at the improper time of year, planting or seeding non-native herbaceous vegetation, total elimination of grazing, and other factors can prevent or seriously hamper native regeneration. This impact is considered potentially significant to wildlife and vegetation resources. To reduce to a less-than-

significant level, the Specific Plan Open Space Plan should be augmented by describing the necessary conditions for native regeneration of open space vegetation.

Harassment of Wildlife

Wildlife inhabiting the Plan Area's native, residential, and drainageway open space could be subject to harassment and harm by motor vehicles and dogs. This impact is considered potentially significant. To reduce to a less-than-significant level, such disturbance could be minimized by enforcing leash laws and prohibiting motor vehicles in all open space in the Plan Area as provided in the Plan Policies of the Specific Plan.

Wildlife can suffer impacts because of rodent control programs in the golf courses and residential open space. Poison bait set out for gophers and ground squirrels can result in the deaths of nontarget wildlife. This impact is considered potentially significant. To reduce to a less-than-significant level, avoid the use of poisons for rodent control.

Fencing or other obstructions (e.g., roads, walls) can impede the movement of wildlife and can prevent animals from reaching critical resources such as creeks or riparian habitats and is considered a significant impact. Wide-ranging wildlife, such as deer, coyote, bobcats, and grey fox need undisturbed, unfenced corridors of land that connect the open space of the Plan Area. These species typically require at least several square miles in their home ranges. Fencing that separates developed land from open space would not adversely affect wildlife movement. However, fencing that cuts across open space or impedes movement from one open space area to another would have an adverse effect on wildlife. This impact is considered potentially significant. To reduce to a less-than-significant level, minimize fencing throughout the Plan Area to permit movement of wide-ranging wildlife.

Large, unbroken tracts of turf or playing fields can also impede the movement of wildlife and their use of otherwise suitable habitat. Some animals (e.g., California quail, wild turkeys, most shrub-dwelling songbirds, cottontails and other small mammals) are reluctant to venture far from the cover of shrubs and trees. This impact is considered potentially significant. To reduce to a less-than-significant level, maximize the amount of vegetation cover in all open space designations.

Annual Grassland

Vegetation

A majority of the area's annual grasslands would be removed by the implementation of the proposed Specific Plan; about 2,110 acres are proposed for development and 483 acres protected in open space. Additional acreage could possibly be protected in presently undesignated "Residential Open Space." The loss of annual grassland habitat is considered a less-than-significant impact from a botanical viewpoint because of its relative local and statewide abundance, the absence of special-status plant species or other important vegetation components in the Plan Area's grasslands, and because the grasslands are dominated by non-native plant species.

Wildlife Resources

Grading and construction would eliminate invertebrates, small burrowing mammals, reptiles, and other relatively immobile animals inhabiting some of the annual grasslands of the Plan Area. The loss of these animals and the grassland vegetation would displace wildlife that currently forage there. The loss of annual grassland wildlife in the Plan Area is considered a less-than-significant impact because of the local and statewide abundance of these species, and because this habitat type supports a relatively low density and diversity of wildlife.

Blue Oak Woodland

Vegetation

The extent of impacts to woodland and forest habitats are difficult to predict because the extent of landscaping undertaken by private landowners and the magnitude of tree death from improper care or mechanical harm cannot be predicted.

Together, blue oak woodlands and live oak forest totals 1,291 acres or 31.6 percent of the Plan Area. Of this, 343 acres or 26.5 percent is protected within open space. About 500 acres of blue oak woodland and 448 acres of live oak forest are included within areas designated for residential development (Table 12-2).

Residential development (house and driveway construction and landscaping) would eliminate 180 acres of blue oak woodland Long-term impacts would remove an additional 99 acres. While other proposed land uses would eliminate 107 acres of blue oak woodland. Understory shrub and herb vegetation probably would be disturbed in about 50-75 percent of these habitats.

Oak trees are highly sensitive to disturbances and can be easily killed as a result. Soil disturbance and compaction kills roots and reduces soil permeability to water; artificial irrigation during the dry season promotes root rot, and mechanical destruction of bark and improper pruning can also harm trees. These effects can occur during the construction or landscaping of private residences, or from accidental or purposeful actions of future inhabitants. Landowners may also choose to remove oak trees for firewood or replacement landscaping.

The extent of losses from these causes to oak woodland and forest habitats cannot be predicted, but are expected to affect 25-50 percent of the woodland and forest habitats.

The loss of oak trees and subsequent reduction in acreage of woodland and forest habitats is considered a potentially significant impact. To reduce to a less-than-significant level, establish guidelines that limit the amount of trees removed and that protect oak trees from construction and landscaping impacts.

About 214 acres of blue oak woodland would be protected in open space. An increase in the acreage of canopy cover contributed by this habitat contained within open space could result if oak regeneration increases because of changes in land use and the intensity of livestock grazing.

The impact of the direct loss of 386 acres or 54 percent of blue oak woodland habitat is considered less than significant because of the large acreage in El Dorado County (possibly as much as 66,000 acres, Tosta pers. comm.) and the state, and because no special-status plant species or other important vegetative attributes are present in blue oak woodlands of the Plan Area.

Wildlife - Blue Oak Woodland

Blue oaks are important foraging and nesting resources for wildlife inhabiting the Plan Area. Elimination of 54 percent of the blue oaks in the Plan Area is considered a significant impact. To reduce to a less-than-significant level, retain a minimum of 50 percent of the blue oak woodland currently existing in the Plan Area in relatively contiguous open space. This could be accomplished through careful design of the golf courses.

From a countywide perspective, the removal of Plan Area blue oak woodland represents the loss of less than approximately 1 percent (386/66,000 acres) of the county total, and from a statewide perspective, an even smaller percentage. Approximately the same percentage of wildlife from the total populations of species supported by this habitat would be lost directly from construction and loss of habitat, or indirectly through lack of habitat available elsewhere outside the Plan Area. From

this larger perspective, the loss of habitat and reduction in wildlife species numbers is considered a less-than-significant impact to the continued existence of the species supported by this habitat type. The cumulative impact of similar habitat and wildlife losses throughout the habitat and species, however, results in overall diminished wildlife numbers and increased vulnerability to extinction for some species. The removal of the oak woodland and the loss of the supported wildlife is a small, but permanent, incremental loss to the native resources of the county.

Live Oak Woodland

Vegetation

As mentioned above, the extent of impacts to woodland and forest habitats are difficult to predict because the extent of landscaping undertaken by private landowners and the magnitude of tree death from improper care or mechanical harm cannot be predicted.

Together, blue oak woodlands and live oak forest totals 1,291 acres or 31.6 percent of the Plan Area. Of this, 343 acres or 26.5 percent is protected within open space. About 448 acres of live oak forest are included within areas designated for residential development (Table 12-2).

Residential development (house and driveway construction and landscaping) would eliminate 112 acres of live oak forest. Long-term impacts would remove an additional 86 acres. While other proposed land uses would eliminate an additional 107 acres of live oak woodland. Understory shrub and herb vegetation probably would be disturbed in about 50-75 percent of these habitats.

Oak trees are highly sensitive to disturbances and can be easily killed as a result. Soil disturbance and compaction kills roots and reduces soil permeability to water; artificial irrigation during the dry season promotes root rot, and mechanical destruction of bark and improper pruning can also harm trees. These effects can occur during the construction or landscaping of private residences, or from accidental or purposeful actions of future inhabitants. Landowners may also choose to remove oak trees for firewood or replacement landscaping.

The extent of losses from these causes to oak woodland and forest habitats cannot be predicted, but are expected to affect 25-50 percent of the woodland and forest habitats.

The status of oak woodlands throughout the state has become an issue of increasing concern. The California Department of

Fish and Game (DFG) has instituted several studies to evaluate the existing status and potential threat to these communities. A very small percentage of the oak population in California occurs in Forest Service (USFS) lands where regulation or protection exists. Over 773,000 acres of oak forest were cut prior to 1985 and an even larger acreage of oak occurs in areas that are currently designated for development. Most of the area affected occurs between Nevada and Fresno counties in the foothill zone which is predominantly oak woodland vegetation. The accelerated rate of loss in the foothills is threatening the continuity of the resource. Additionally, the oak woodland as a whole, is experiencing a reduced rate of reproduction which, further contributes to reduction of the resource.

The loss of oak trees and subsequent reduction in acreage of woodland and forest habitats is considered a potentially significant impact. To reduce to a less-than-significant level, establish guidelines that limit the amount of trees removed and that protect oak trees from construction and landscaping impacts.

About 129 acres of live oak woodland would be protected in open space. An increase in the acreage of canopy cover contributed by this habitat contained within open space could result if oak regeneration increases because of changes in land use and the intensity of livestock grazing.

The direct loss of 305 acres or 52.8 percent of live oak forest canopy cover is considered a significant impact because only 4,000 acres of this habitat occur in El Dorado County (Tosta pers. comm.). Twenty-two percent canopy cover of live oak forest vegetation is protected in open space, and another 25-50 percent is potentially protected within residential open space and on private lots.

To reduce to a less-than-significant level, the following measures are required to ensure that canopy cover of the live oak forest does not drop below 25 percent and that oak trees in developed areas are not indiscriminately removed or harmed in some other fashion:

- establish guidelines that limit the amount of oak tree removal and protect oak trees from construction and landscaping impacts (25-50 percent of canopy cover should be protected);
- landscape golf course edges, roadsides, and other publicly owned lands with trees and shrubs indigenous to the Plan Area; and
- develop an oak reestablishment program.

Wildlife - Live Oak Forest

The extensive live oak forest in the Plan Area is the most important wildlife habitat at the site. Removing of 52.8 percent of the oak forest of the Plan Area would substantially reduce the density and diversity of wildlife which require live oaks for food, cover, nesting, and roosting grounds. This is considered a significant impact.

To reduce to a less-than-significant level, retain a minimum of 75 percent of the live oak forest in open space. A substantial portion of the remaining blue and live oak forest should be in large, contiguous tracts to accommodate wide-ranging animals and to provide corridors for wildlife movement. Retention of less than 75 percent of the live oak forest in the Plan Area is considered a significant unavoidable impact.

From a county perspective, the loss from the Plan Area of live oak forests and their supported wildlife represents 7.6 percent (305/4,000 acres) of the county total. Such a loss is considered a potentially significant impact. From a county perspective, retention of approximately one-half of the live oak forest in permanent open space could reduce the impact to a less-than-significant level. This could be accomplished through careful design of the golf courses and by retaining large contiguous tracts connected to similar habitat offsite.

Impacts to wildlife resources could be further mitigated if the carrying capacity of habitats within open space is increased. Planting or permitting the establishment of riparian vegetation along creeks and retention ponds, landscaping roadways, and golf courses with native species, planting vegetation of high value to the areas indigenous wildlife, planting trees and shrubbery in deficient portions of blue oak woodland contained within open space, and the installation of artificial water sources in live oak forests and blue oak woodlands are all measures that would improve the remaining wildlife habitat.

Creekside

Vegetation

The extent of impacts to drainages, and hence creekside habitats, are unknown. The Specific Plan states that drainages will be left in a native condition or designed to appear native; this implies that some drainage habitat will be impacted during construction. The Specific Plan also states that drainages will be contained within open space in some villages. This level of information is not sufficient to predict the location or amount of creekside habitat that would be removed or altered by developments proposed for the Plan Area.

No proposals currently exist for diversion of water for onsite uses; therefore, no flow reductions are anticipated except after peak runoff events when some discharge would be temporarily held back in detention ponds. A substantial increase in discharge is not expected, but some minor increases during spring and summer may result from landscape watering on residential lots and golf courses.

The value of creekside habitat would improve throughout the Plan Area because over 6 miles or greater than 66 percent of this habitat would be protected in various types of open space, and livestock grazing would be eliminated. Where sufficient water becomes available, the reduction or elimination of grazing could allow the establishment of willows, cottonwoods, and other riparian-dependent species in areas where oaks trees and annual grasslands presently occupy creekside habitats. Increasing the amount of riparian-dependent vegetation, and protecting creekside habitats in open space, would greatly improve the value (to wildlife and riparian vegetation) of creekside habitats. This increased value could partially compensate for losses of creekside habitat and also increase the wildlife carrying capacity. It is also possible that some portions of the creeks in proposed golf courses may be allowed to develop native riparian vegetation and compensate for losses associated with the development.

Creekside habitats would be impacted directly by removal for roads, golf courses, and retention ponds, or indirectly by activities of landowners with riparian habitat on their property.

Direct Losses. Construction of roads, retention ponds, and golf courses would impact creekside habitats, but only affects about 500 linear feet that supports well-developed (significant) riparian-dependent vegetation. A vast majority of the affected creekside habitat supports herbaceous or oak-dominated vegetation. Road crossings and retention ponds eliminate 0.77 linear miles of creekside habitat (Table 12-3). The road proposed along Carson Creek could impact the creekside habitat. The fate of creekside habitats on golf courses is unknown. The schematic illustrations imply that creek channels would be converted to fairways. Elimination of creekside habitats is assumed within areas shown as golf courses in the Specific Plan. About 3 miles of creekside habitat are included in the proposed golf courses.

Creekside habitats within golf courses are at the headwaters of several creeks; these areas support oak-dominated or herbaceous riparian habitat. It is uncertain how much riparian-dependent vegetation (e.g., willows or cottonwoods) headwater drainages in the Plan Area could support because of the limited seasonal availability of water in these areas. Portions of one golf course along lower Allegheny Creek includes willow-cottonwood riparian habitat in a shaded/protected location where

Table 12-3. Length of Creekside Habitat Under Preproject and Postproject Conditions

Riparian Habitat Type	Total Present in Plan Area (Miles)	Linear Mileage Removed[a]			Total Mileage Removed Under the Proposed Specific Plan	Open Space
		Roads[b]	Retention Ponds	Golf Course		
Herbaceous	2.6	0.04	0.42	0.15	0.61	2.01
Oak-dominated	6.5	0.04	0.27	2.85	3.16	3.34
Willow-cottonwood-oak-dominated	0.7	0	0	0.09	0	0.70
TOTALS	9.8	0.08	0.69	3.09	3.86	5.96

[a] Refers only to length, not width, of corridor.

[b] Assume 100-foot-wide impact area at creek crossings.

surface water is present for a greater portion of the year. After construction, creekside habitat would still be present along the newly constructed drainages in the golf course, but it would likely be turf-forming lawns and nonnative woody species.

The loss of creekside habitats is considered a significant impact due to its local and statewide scarcity and importance to dependent plant and wildlife species and because most creekside habitats onsite currently support very small amounts of riparian-dependent vegetation. To reduce to a less-than-significant level:

- o avoid or minimize impacts to creek channels in golf courses and establish native riparian vegetation after construction;
- o establish 100-foot-wide building setbacks for intermittent creeks in nondevelopable open space;
- o permit the establishment of riparian and wetland vegetation in retention ponds and along watercourses; and
- o revegetate disturbed creekside habitats with riparian trees and shrubs indigenous to the area.

Indirect Losses. Indirect losses of creekside habitat could result from actions of private landowners. Vegetation within creekside habitats could be replaced with landscaping, removed to provide fuelwood, or cleared to improve creek access.

This impact is considered potentially significant. To reduce to a less-than-significant level, establish 100-foot-wide building setbacks for intermittent creeks in nondevelopable open space, and establish native riparian vegetation after construction, as discussed earlier.

Wildlife

Grading and landscaping on Allegheny Creek and other intermittent drainages of the Plan Area would remove the native streamside vegetation along these creeks. This impact is considered significant. To reduce to a less-than-significant level, establish a 100-foot-wide buffer zone along all intermittent drainageways, and establish undeveloped open space adjacent to riparian areas, where possible.

Implementation of the Specific Plan could possibly enhance the existing wildlife habitat at Allegheny Creek and other intermittent drainages of the Plan Area. Eliminating or reducing grazing and augmenting creek flows with irrigation runoff could increase the growth of riparian vegetation along the creek, thus improving its quality as wildlife habitat. The well-developed riparian vegetation along the western edge of the

existing golf course provides a model for the kind of habitat improvement that could occur to drainages in the Plan Area. Such habitat improvement only can occur if the drainages are maintained as undeveloped, nonlandscaped, riparian corridors.

The riparian vegetation along Carson Creek and its tributaries is important to wildlife habitat in the Plan Area. Riparian habitat in California is a scarce and valuable wildlife resource. Impacts to Carson Creek wildlife riparian habitat are considered significant. To reduce to a less-than-significant level, establish a 200-foot-wide buffer zone (i.e., 100 feet on each side of the creek centerline) along Carson Creek.

Freshwater Marshes, Seepages, and Stockponds

Vegetation

These three habitat types would be entirely eliminated by development. Vegetation occupies less than 2 acres of these habitats. From a botanical standpoint this impact is considered less than significant because:

- very small acreages are involved;
- there is low diversity of native wetland vegetation in these habitats in the Plan Area; and
- the habitats have been highly altered by livestock.

The loss of wetland vegetation associated with these habitats could be partially compensated by allowing the development of some wetland vegetation along drainages and edges of retention ponds and lakes.

Wildlife - Freshwater Marshes

The two small freshwater marshes in the Plan Area are important wildlife resources. These wetlands are scarce on a regional and statewide basis and support species that are not found elsewhere in the Plan Area. Although these marshes are small, the loss of these wetlands is considered a significant impact. To reduce to a less-than-significant level, encourage the development of riparian and marsh vegetation around the retention ponds and develop small alternative sources of water on the golf courses or open space areas.

Wildlife - Seeps

The seeps scattered through the Plan Area are of limited value to wildlife because they are trampled and disturbed by

cattle. Because of their degraded nature, the loss of the seeps is considered a less-than-significant impact.

Wildlife - Stockponds

The stockponds in the Plan Area are so degraded by livestock grazing that their loss is considered less than significant. Any impacts associated with eliminating these muddy ponds would be more than compensated for by the proposed creation of ungrazed, relatively undisturbed ponds elsewhere in the Plan Area.

Bass Lake

Vegetation and Wildlife

The aquatic and shoreline habitat at Bass Lake would not be altered by development proposed in the Specific Plan.

Serpentine Chaparral

Vegetation

The serpentine chaparral habitat would not be impacted by the development proposed in the Specific Plan, but recreation or maintenance activities could adversely affect this habitat. Impacts to this habitat are considered less than significant because surveys did not locate any special-status plant species.

Wildlife

Wildlife impacts associated with the small acreage of the serpentine chaparral is considered less than significant.

Aquatic Resources

Fishery resources within the Plan Area could be impacted from water quality and stream habitat modifications. Fish downstream of the Plan Area in New York Creek would also be affected by adverse water quality originating in the Plan Area. Water quality impacts would be short and long term. Short-term impacts would result from grading or construction activities; long-term impacts would occur primarily from urbanized runoff.

Water Quality

Grading and construction activities would cause an increase in erosion and would transport sediment short distances downstream where sedimentation would occur. Streambank alteration, and construction of roads, bridges, culverts, or off-street hiking trails through the open space areas would have greater impacts than development farther from the creeks. Temporary turbidity and siltation problems would occur, particularly if soils enter the creeks, or if heavy equipment operates in the stream channel. Increased sedimentation downstream of the Plan Area would adversely affect salmon and trout that use lower New York Creek for spawning and juvenile rearing during spring (Meyer pers. comm.).

Timing of various construction activities and rainfall partially determine water quality impacts from construction activities. Summer construction activities would decrease sediment and other pollutant levels that may impact water quality, because most Plan Area streams would be dry during this period. Winter construction tends to result in more erosion and sedimentation.

Sedimentation and short-term water quality impacts are considered potentially significant. Several mitigation measures, some of which have been incorporated into the project design, could be employed to reduce impacts to a less-than-significant level, including implementing precautionary measures during design and construction to minimize stream degradation, and preparing and implementing an erosion and sediment control plan.

Long-term impacts to water quality would occur primarily because of runoff from urbanized uses that would enter Plan Area streams. Runoff from streets, driveways, parking lots, golf courses, and landscaped areas typically contain oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment.

Stream quality depends on the actual runoff quality, runoff rate, and stream flow. Since Plan Area streams are ephemeral (seasonally wet), pollutions (including fertilizers) in runoff would tend to collect in stream beds during dry periods and then create a pulse of high concentrations as creeks begin flowing in response to winter/spring storms. Impacts to fish outside the Plan Area are considered potentially significant because serious water-quality problems resulting from increased pollutant and nutrient levels would threaten several species of trout and chinook salmon.

The extremely small population of green sunfish and bluegill residing in creeks within the Plan Area are less sensitive to adverse water quality conditions. These fish would not be as seriously affected by increased pollutant levels as would salmon and trout.

To reduce long-term potentially significant impacts on water quality to a less-than-significant level, the developers should implement precautionary measures during design and construction to minimize stream degradation.

Stream Habitat

Construction-related activities have the possibility to alter stream channel morphology, thereby directly impacting fish habitat. Removal of riparian vegetation along streambanks can increase stream temperatures and reduce allochthonous (leaf litter) input. Increased temperatures may preclude summer rearing of fish in the few, small perennial pools of project area creeks, while the loss of allochthonous material could affect stream productivity as a whole. These impacts are considered potentially significant. To reduce to a less-than-significant level, the developers should implement precautionary measures during design and construction to minimize stream degradation.

As development increases, runoff from the Plan Area may become flashy, and peak flows may occur more frequently. Streambed scouring may occur in response to flashy runoff. This impact is considered potentially significant. To reduce to a less-than-significant level, implement runoff reduction measures, several of which are incorporated into the project design.

Special-Status

Plant Species

Surveys for special-status plant species were conducted during late spring and summer during the period of identification of the target species that could potentially occur in the Plan Area. No special-status plant species were found in the Plan Area.

Wildlife Species

Tricolored Blackbirds. Tricolored blackbirds were not observed during field surveys; however, this species could lose possible breeding grounds by the elimination of marshes on the Plan Area. This impact is considered potentially significant. To reduce to a less-than-significant level, encourage the development of riparian and marsh vegetation around retention ponds and along watercourses.

Southern Bald Eagle. Bald eagles do not forage or breed at or near the Plan Area. Implementation of the Specific Plan would result in a less-than-significant impact to this species.

Peregrine Falcon. This raptor does not breed at the Plan Area, but may forage there on very rare occasions. Implementation of the Specific Plan would result in a less-than-significant impact to this species.

Mule Deer. The resident deer in the Plan Area would lose foraging grounds and cover. The number of deer in the area is undetermined, so it is not possible to assess the magnitude of the impact. This impact is considered potentially significant. To reduce to a less-than-significant level, retain extensive, contiguous tracts of oak forest and blue oak woodland in undeveloped open space, enforce leash laws in the open space, and minimize fencing to permit movement of wide-ranging wildlife.

MITIGATION MEASURES

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan.

Residential Land Use

1. Architectural Construction

   b. Buildings shall generally be designed and sited in accordance with the constraints of topography, vegetation, adjacent uses, and other native features of a particular building site.

2. Site Development and Grading

   d. Removal of oak trees and other large native trees with trunk circumference of 30 inches at 4.5 feet above grade shall be avoided where feasible.

   e. In order to avoid damage to root systems, residential construction shall not occur within the canopy area of oak trees over 30 inches in circumference, and shall be subject to review as provided in the Design Guidelines.

   g. In order to preserve the vegetation character of the Plan Area, the planting of native shrubs and ground cover shall be encouraged in all new landscaping.

   h. Landscaping in areas adjacent to native open space shall be fire-resistant.

Commercial Land Use

1. General

h. Natural drainage courses shall be incorporated in landscape plans as surface drainage, dry creek courses, and retention basins.

2. Village J (Bass Lake Area)

e. To the maximum extent possible, landscape design shall incorporate native trees and shrubs.

Golf Courses and Country Club

a. Natural topography shall be retained to the maximum extent possible and incorporated into the site design.

b. Storm water drainage shall be by means of native streamcourses incorporated into the site design.

c. Removal of existing trees and riparian vegetation shall be kept to a minimum.

d. Water conservation measures shall be employed in the design and landscaping of the golf courses. In particular, treated wastewater and stored drainage water shall be used for irrigation to the maximum extent possible.

e. Golf course boundaries shall be defined without the use of fencing wherever possible. Where fencing is required, an open design shall be employed.

f. All landscaping, site development, and architectural design shall be consistent with the Design Guidelines of the Specific Plan.

Institutional Use Policies

3. Neighborhood Parks

c. Native and drought tolerant trees and shrubs shall be incorporated into the design of parks where feasible.

Circulation

2. Pedestrian Paths and Trails

b. Paths and trails through residential open space should be located to minimize intrusion upon privacy of residents.

c. Where possible, trails should follow native drainage courses. In most instances, drainage easements will provide for trail construction and public access.

d. Sidewalks, trails and paths which are not adjacent to public streets should be clearly marked to facilitate use and discourage wandering beyond the recorded easement.

f. Barriers shall be designed and installed to prevent access by unauthorized motor vehicles.

h. Trail construction standards within native open space shall ensure that construction and subsequent use has a minimum impact on terrain and vegetation. Standards should also serve to minimize maintenance requirements.

Open Space

1. Natural Open Space

a. The boundaries of natural open space shall blend with boundaries of the villages in a manner to enhance and integration of open space and developed areas.

b. Open space shall be linked visually and physically to the extent practicable by prohibiting perimeter lot fencing adjacent to the open space. Perimeter fencing may be permitted for rural parcels as provided in the Design Guidelines and CC&Rs.

General Policies

b. Large areas within the plan boundaries which contain steep topography, expanses of tree cover, sensitive environmental or archeological features, or major recreational amenities shall be preserved as permanent open space. (NEW)

3. Drainageways

a. Increased runoff shall require erosion control techniques to be integrated into the overall landscape design. Emphasis is placed on solutions that conform to the native character of the landscape and minimize change to the existing condition of the creek channels.

b. A 100-foot-wide undeveloped buffer zone will be established along Carson Creek in accordance with Department of Fish and Game requirements.

c. Drainageway easements shall specifically preclude erection of structures and other site

development not consistent with purpose of these areas.

Public Facilities and Services

3. Parks

c. Native and drought-tolerant trees and shrubs shall be incorporated into the landscape design to the maximum extent possible.

In addition to the Plan Policies listed above, the Specific Plan includes several other biologic mitigation features, which are listed below.

Drainageways. All major drainageways within the Plan Area will either be left in a completely native, unaltered condition, or modified to appear native. The wide, shallow design of channels with riparian vegetation will constitute an element of open space within certain villages. Drainageways will be contained within easements which provide for routine maintenance as well as pedestrian travel. An important feature of the drainageway system is the inclusion of storm drainage retention ponds. Riparian vegetation will be managed within drainageways and retention ponds in order to enhance the open space character and habitat of these areas.

Natural Open Space. Approximately 1,020 acres, or 23 percent of the Plan Area, have been set aside as native open space. This acreage occurs in areas of steep, visually prominent topography and dense vegetation. Natural open space will be preserved, in perpetuity, in an essentially unaltered condition. No development will occur within these areas except the minimum necessary for maintenance and fire prevention and those directly associated with the limited recreational use of the area.

Uses allowed will be restricted to those which have minimal impact on the open space character such as jogging, hiking, and horseback riding. Limited recreational facilities may be included in both the public and private open space areas where such facilities are compatible with the open space character. A management program is intended to preserve the native character of these areas while providing for fire protection and erosion control.

Residential Open Space. Certain common areas created in conjunction with attached residential developments will be designated as Residential Open Space. Further, in the review of all other residential development applications, open space easement dedications on individual parcels may be required to achieve compliance with principles stated herein. Easements will be required in order to prevent development other than

certain accessory structures and landscaping. General public access rights will not be provided.

Uses Prohibited in Open Space

a. Unauthorized motorized vehicles including motorcycles, off-road and all-terrain vehicles.

b. Tree and vegetation removal, except for fire protection and maintenance purposes.

c. Grading, except the minimum necessary for erosion control and fire prevention.

d. Overnight camping.

e. Open fires and barbeques.

f. Unleashed dogs.

Fire Hazard Control

a. Open fires and barbeques will be prohibited year-around.

b. Dirt roads for fire equipment access will be sited and created in accordance with specifications of the El Dorado Hills Fire Department and will be maintained by the Master Developer, or the Master Homeowner's Association that will succeed the master developer, or the public entity that will acquire the public portions of the open space.

These access roads will also serve as fire breaks.

c. Public access by unauthorized motor vehicles will be prohibited by use of barriers.

d. Perennial grasses and other fire-resistant plant materials may be introduced in high hazard areas on a limited basis to provide fire breaks.

e. The stability of plant communities in grassland in close proximity to residential areas will be monitored to determine if brush and other heavy fuel-load plants are encroaching. Where encroachment is occurring due to biological succession, a detailed study will be undertaken to determine the appropriate corrective measure, biological or physical, necessary to reduce the hazard of fire.

f. The El Dorado Hills Fire Department will have the right to declare native open space areas closed to the public during periods of high fire hazard and will

have authority to post appropriate warning devices and signage.

Mitigation Measures Recommended by the EIR Consultant

Vegetation

Augment the Specific Plan Open Space Plan. The open space management plan contained within the Specific Plan should include objectives and policies for open space preservation and guidelines for vegetation removal and maintenance. The plan should apply to native, drainageway, and residential open space areas. Objectives and policies should be adopted that ensure the perpetuation and native regeneration of existing vegetation. Such a plan can provide for the long-term existence of the habitats contained within open space and help facilitate site recovery from disturbances associated with construction and open space management.

To ensure that significant impacts are eliminated or reduced to a less-than-significant level, open space management guidelines must control the removal of native vegetation so that the ecological values and regeneration capability of open space are not significantly reduced. Guidelines must specify:

- a minimum vegetation density (tree and shrub) below which no vegetation removal is permitted, blue oak woodland overstory cover should not drop below 10 percent and live oak forest cover should not drop below 60 percent to prevent the conversion of these habitats to grasslands or other communities;

- sensitive vegetation types and individual trees that should not be impacted;

- the extent of clearing or removal of herbaceous vegetation permitted;

- the locations of fire access roads, fuel breaks, and passive recreation trails;

- the species of native plants that can be used for revegetation and erosion control;

- control burning techniques; and

- necessary conditions for native regeneration of open space vegetation.

Establish Guidelines that Limit the Amount of Oak Tree Removal and Protect Oak Trees From Construction and Landscaping Impacts. The following guidelines ensure that oak trees not eliminated during construction and landscaping are not

inadvertently harmed or killed during the construction and landscaping of residences and businesses. The guidelines apply to all oak trees in the Plan Area.

- Protect all oak trees greater than 6 inches diameter at breast height to the maximum extent feasible (dbh).

- Signs, ropes, cables, and other items should not be attached to oak trees.

- No employee vehicles, construction equipment, mobile offices, supplies, materials, or facilities should be parked, stockpiled, or located within the driplines of oak trees.

- Soil surface removal greater than 1 foot should not occur within the driplines of oak trees, and no cuts whatsoever should occur within 5 feet of their trunks.

- Earthen fill greater than 1 foot deep should not be placed within the driplines of oak trees, and no fill whatsoever should be placed within 5 feet of their trunks.

- If extensive cuts or fills are made near oak trees beyond the dripline, adequate drainage and/or supplemental irrigation should be provided to mitigate the adverse effects caused by elevation changes.

- No trenching whatsoever should be allowed within the driplines of oak trees. If it is absolutely necessary to install underground utilities within the dripline of oak trees, the trench should be either bored or drilled but not within 5 feet of tree trunks.

- Where soil compaction occurs within the dripline of an oak tree, measures should be taken to restore soil condition and integrity.

- Replant areas that supported oaks prior to the development with the same native oak species.
- Paving within the driplines of oak trees should be stringently minimized. When it is absolutely necessary, porous materials should be used with consideration given to the need for aeration.

- No artificial irrigation within the driplines of oak trees should be permitted.

- Landscaping beneath oak trees may include nonplant materials such as boulders, cobbles, wood chips, etc. The only plant species that should be planted within the driplines of oak trees are those that are tolerant of the natural semi-arid summer environment of the trees.

Limited drip irrigation approximately twice per summer is recommended for the understory plants as this intensity of irrigation should sustain landscaping without adversely affecting oak trees.

- Develop an instructional pamphlet for all homeowners that explains how to protect oak trees on their property. Work with homeowners at the time of new home purchase and later through Homeowners' Associations to have oak trees and other vegetation protected. Information on potential fire resistant vegetation and procedures should also be included.

Landscape Golf Course Edges, Roadsides, and Other Publicly Owned Lands with Trees and Shrubs Indigenous to the Plan Area. Planting golf course edges, roadsides, parks, and other areas with trees (blue oak, live oak, and digger pines) and shrubs would help compensate for the removal of this vegetation.

Develop an Oak Reestablishment Program. Whenever oak trees die, especially through lack of application of the oak tree protection guidelines, new management techniques should be instituted and the oak trees replanted. Such programs should especially be undertaken in public areas, such as golf courses and parks, and large lot residences.

Avoid or Minimize Impacts to Creek Channels in Golf Courses and Establish Native Riparian Vegetation After Construction. Creek channels should be avoided during golf course construction to the fullest extent possible. Unavoidable impacts should be compensated for by reestablishing the creek channel and vegetation.

Establish the 100-Foot-Wide Building Setbacks for Intermittent Creeks in Nondevelopable Open Space. All creekside habitat should be protected from development and indirect impacts from future occupancy by placing them in nondevelopable open space and creating a 100-foot-wide building setback. This setback should include riparian habitats that require disturbance during construction (e.g., golf courses), but that could still function as creekside habitat in the future. A 200-foot wide buffer for Carson Creek is recommended below.

Permit the Establishment of Riparian and Wetland Vegetation in Retention Ponds and Along Watercourses. Riparian and wetland vegetation should be allowed to establish to the fullest extent possible along waterways and ponds. It is recognized that the transport and storage of flood waters is an important concern because vegetation impedes these processes. The amount of vegetation permitted in ponds and waterways would be based upon maintaining flood control.

Revegetate Disturbed Creekside Habitats with Riparian Trees and Shrubs Indigenous to the Area. Creekside habitats disturbed

by roads, retention ponds, lakes, and golf courses should be revegetated with the same native woody riparian species that natively occur on the Plan Area. Revegetation goals at a minimum should be to provide full replacement for the resources eliminated.

Establish a Management Plan and Guidelines for Controlling Riparian Vegetation. Establish a management plan and guidelines that provides for adequate drainage flow and fire protection and ensures the retention of as much native riparian vegetation as possible.

Wildlife

Retain a Minimum of 50 Percent of the Blue Oak Woodland in Relatively Contiguous Open Space. Impacts to the Plan Area wildlife resulting from the loss of foraging and nesting resources in the blue oak woodland could be reduced to a less-than-significant level by maintaining at least half of the existing blue oak woodland. Some of the blue oak woodland could be in residential open space and in the golf course(s) between fairways. To ensure survival of the oaks, the guidelines discussed earlier should be followed.

Retain a Minimum of 75 Percent of the Live Oak Forest in Open Space. Retaining at least 75 percent of the Plan Area's live oak forest in open space designations would reduce wildlife impacts to Plan Area wildlife to a less-than-significant level. Because live oak forest is included in residential open space and the golf courses, the oak preservation guidelines discussed earlier should be strictly followed.

If the percentage of live oak forest preserved could be improved from 22.3 percent (Table 12-2) to approximately 50 percent by the inclusion of protected live oak forest in developed areas and the permanent revegetation of disturbed areas, the impact on the vegetation could be reduced, from a county perspective, to a less-than-significant level. Large contiguous areas are needed, as well as connections to offsite live oak forests. Development of year-round water sources and the planting of vegetation with wildlife values (e.g., food, cover) would also help to compensate for live oak forest habitat losses. Planting should be in open space as well as parks, golf courses, schools, and other open areas.

Establish 100-Foot-Wide Buffers Zones Along All Intermittent Drainageways in the Plan Area. To avoid significant impacts to wildlife inhabiting Allegheny Creek and other intermittent waterways in the Plan Area, 100-foot-wide corridor or streamside vegetation should be preserved free of development. No clearing of trees, snags, or undergrowth should be permitted in this riparian corridor, nor the planting of lawns or non-native ornamental shrubs or trees unless necessary for safety

reasons or to remove diseased trees. Limited vegetation removal may be necessary for maintaining flood control. Vegetation removal should be evaluated on a criteria which prohibits any large-scale clearing.

Establish a 200-Foot-Wide Buffer Zone Along Carson Creek. To retain the high wildlife and amenity values along Carson Creek, no development or landscaping should occur within a 200-foot-wide (100 feet on each side) corridor along Carson Creek. No clearing of trees, snags, or undergrowth should be permitted in the Carson Creek riparian corridor, nor the planting of lawns or nonnative ornamental shrubs and trees unless necessary for safety or to remove diseased trees. Limited vegetation removal may be necessary for maintaining flood control. Vegetation removal should be evaluated on a criteria which prohibits any large-scale clearing.

Establish Undeveloped Open Space Adjacent to Creekside Areas, Where Possible. The wildlife value of creekside habitat is increased by its proximity to undeveloped open space. Golf courses are not "undeveloped" from a wildlife perspective because their landscaped, manicured grounds and introduced shrubs and trees typically have low wildlife values compared to native plant communities. Where possible Plan Area's creekside habitat should be included within extensive tracts of live oak forest open space.

Encourage the Development of Riparian and Marsh Vegetation Around the Retention Ponds. Within the constraints of flood control management guidelines, riparian and wetland vegetation should be allowed to establish in and around the retention ponds. Creation of new riparian habitats at these ponds would substantially enhance their wildlife values.

Develop Alternative Sources of Water in the Golf Courses or Open Space Areas. Alternative sources of water for wildlife should be created and riparian vegetation encouraged in the golf courses and open space areas (including both permanent and residential open space). A minimum of six small guzzlers or spring developments may provide the necessary water. In addition, the integration of the golf course water features into areas which are adjacent to native vegetation areas will facilitate use of the water by animals.

Maximize the Amount of Vegetation Cover in All Open Space Designations. Because some wildlife are reluctant to venture far from the cover of trees or undergrowth, extensive stretches of landscaped lawns, golf courses, or playing fields can be an impediment to wildlife movement. Where possible in parks and golf courses, native shrubs and trees should be planted in patches so that broad stretches of unbroken turf are minimized.

Avoid the Use of Poisons for Rodent Control. To prevent mortalities of non-target wildlife, rodent control programs at

the golf course and in open space areas should avoid the use of poisons.

Minimize Fencing to Permit Movement of Wide-Ranging Wildlife. The objective in minimizing fencing is to allow wildlife free movement to other open space areas and to allow unimpeded access to riparian and pond habitats. The use of tall woven fencing (e.g., cyclone fence) should be avoided because it can impede wildlife movement. Vehicular access in the open space areas should be minimized through the use of non-fence materials or construction such as posts, rocks, logs, gullies, etc.

Aquatic Resources

Implement Precautionary Measures During Design and Construction to Minimize Stream Degradation. Precautions taken during design and construction would minimize environmental degradation. The degradation would not depend on precautions. The following mitigation measures would help to maintain water quality and stream habitat within and outside the Plan Area:

- Design Measures
  - Design stream crossings so that the approaches are at right angles, where possible.
  - Design the creek crossings based on a hydrologic analysis of the contributing drainage area in conjunction with historic flow records and size structures for the 100-year event. The crossings should be designed to minimize flow restrictions and localized high velocities. Channel bottoms above and below the crossing should be rocked, if necessary.
- Construction Measures
  - Minimize construction activities in creeks.
  - Restrict construction activities in creeks to summer low-flow periods (June-September) to minimize sediment impacts.
  - Prohibit operation of construction equipment in flowing water.
  - Limit construction activities near streams to the smallest possible area.
  - Prohibit construction-related by-products (oil, cement, etc.) from discharging into streambeds.
  - Minimize surface disturbance as much as possible.

- Dispose of excavated material in an appropriate manner, away from water courses.

- Promptly revegetate cleared areas with native plants.

- Collect and remove pollutants, such as sanitary wastes and petroleum products, from the job site.

- Remove riparian vegetation only when absolutely necessary. Replace with native riparian plants.

- Use chemical toilets at all construction sites to prevent bacterial and nutrient contamination of the creeks.

Prepare and Implement an Erosion and Sediment Control Plan. The following measures should be considered:

o Protective mulches and coverings should be used to prevent erosion from rainfall impact and runoff, and from the action of wind on disturbed soil such as cut and fill slopes. Types of mulch to be considered include: Straw, straw and hay, punched straw, net-anchored straw, tackifiers with straw, woodchips, sawdust, wood fiber, chemical mulch, and jute netting. Hydroseeding/hydromulching should also be considered. (Hydroseeding/hydromulching is the process of spraying seed, mulch, and fertilizer, using a jet of water applied under pressure.)

o Slopes and other graded areas should be protected from runoff. Methods to be considered include: temporary diversion dikes, permanent diversion dikes, interceptor ditches, slope drains (down drains), flexible down drains, rock-lined ditches, and diversions.

o Energy dissipators should be considered at all outlets discharging on erodible soil. The energy dissipator may be used temporarily during construction or may be permanent. Common types of energy dissipators are a level spreader, discharge apron, drop inlet, and hydraulic jump.

o When feasible, project construction should be limited to the drier months (spring and summer). During these months, construction should be minimized during adverse weather conditions (e.g., high winds).

o Dust palliatives suppress wind-borne dust to minimize the loss of topsoil and reduce erosion and sedimentation. Any topsoil removed during construction should be saved for future distribution over cut-and-fill areas to be revegetated.

- Grading in areas having a high erosion potential should be minimized. All cuts should be stabilized. If construction takes place during the rainy season, appropriate techniques such as covering exposed surfaces with straw, mulch, or other appropriate material should be applied.

Mitigation Measures Required by County Policy of State Law

The goals and policies of the EDH-SF Area Plan which relate to vegetation, wildlife and aquatic resources are included in Appendix I.

Chapter 13
Cultural Resources

Peak and Associates, Inc. conducted an intensive field survey of the Plan Area with the exception of a privately owned 10.5-acre area (Figure 13-1). Their complete report is included as Appendix G. The following is a summary of that report.

Setting

Cultural History

Prehistoric Period. The Plan Area lies in the territory attributed to the Nisenan tribe--a branch of the Maidu group of the Penutian language family. Tribes of this family dominated the Central Valley, San Francisco Bay areas, and western Sierra Nevada foothills at the coming of the white man. The Nisenan controlled the drainages of the Yuba, Bear, and American Rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural similarities. For this reason, they are usually referred to by this term rather than the more technical "Southern Maidu." In any event, the local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village.

The Nisenan who occupied the foothill and lower Sierra Nevada mountain elevations selected village sites on ridges and large flats or meadows near the major streams. These villages tended to have smaller populations than those in the great valley, and it was not uncommon for family groups to establish their homes away from the main village (Wilson and Towne 1978).

Both the valley and foothill people lived by hunting and gathering, with the latter being more important. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were used to process the acorn meats into flour, and the mortar cups are frequently found throughout the range of oak trees. Both salmon and eel were caught at nearby Salmon Falls.

EL DORADO HILLS

EL DORADO COUNTY, CA

CULTURAL RESOURCES SURVEY AREA

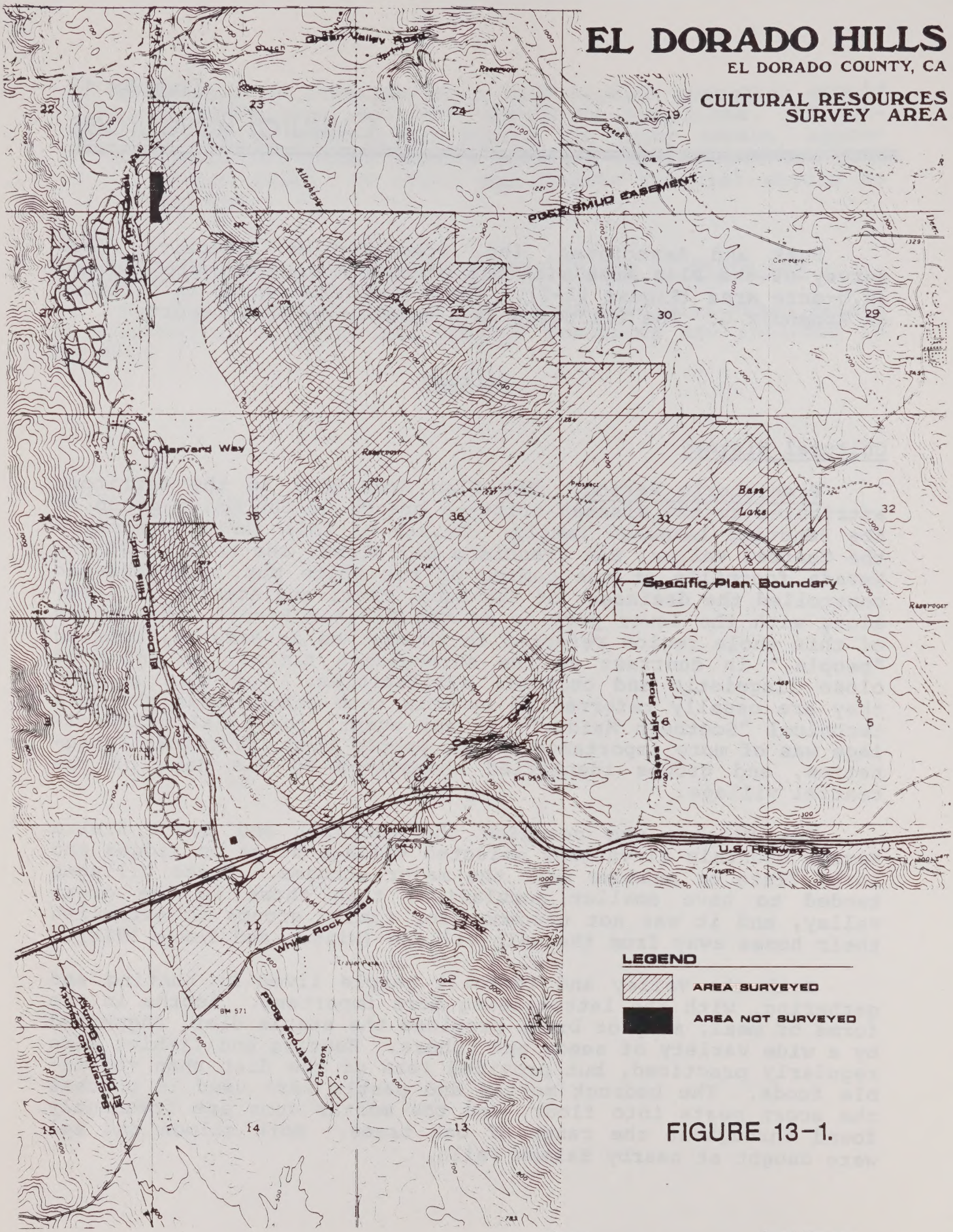

FIGURE 13-1.

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

In 1833, the great epidemic swept through the Sacramento Valley. This epidemic has been attributed to malaria (Cook 1955), and is estimated to have killed 75 percent of the native population, leaving only a shadow of the original Maidu to face the intruding miners and settlers. The Nisenan of the mountain areas felt little of the impact of European settlement in California as compared to the Valley Nisenan, who were subjected to some missionization by the Spanish, and then were virtually destroyed by the great epidemic of 1833. After 1839, many of the survivors worked for Sutter. The Mountain Nisenan, remote from these early impacts, were overwhelmed by the gold rush. Native ways of life were almost totally abandoned, and today only a few families in Placer, Nevada, Yuba, and El Dorado Counties identify themselves as Nisenan and can speak the language (Wilson and Towne 1978).

Historic Period. After the discovery of gold in 1848, the Sierra foothills were enmassed by thousands seeking their fortune. Many towns and camps rapidly developed to supply goods and services to the miners. Clarksville served as a way station for emigrants and was later a mining camp. In early 1855, the town was called "Clarkson's Village," and shown on the Placerville Road. The Placerville Road was one branch of the Carson Emigrant Road, established in 1849. The road forked at Clarksville, with one branch going to Folsom, then on to Auburn and the gold camps on the North Fork of the American River. This fork of the road is roughly the present-day alignment of Silva Valley Road.

An even earlier road in the region was the Coloma Road, running from Sacramento to Folsom, then along the route of present-day Green Valley Road, then on to Coloma (Hoover, Rensch, and Rensch 1970).

The settlers recognized the value of the land around Clarksville for stock grazing and dairying, and by 1866 they had established an extensive system of fencing and roads in the project area. The area of Allegheny and New York Creeks had a number of mines (Sioli 1883).

A post office was established in the town in July 1855, and postal authorities named the settlement "Clarksville" (Salley 1977).

Some of the early settlers in Clarksville were the Tong family, who crossed the plains in 1855. The Tongs improved a road and established a toll gate at their hostelry, Railroad House. The town had a population of several hundred. Thirteen people were reportedly hanged (Wooldridge 1931).

One-half mile west of Clarksville stood the Mormon Tavern. This stage stop was constructed in 1849 and enlarged and operated by Franklin Winchell in 1851. It became a remount station of the Central Overland Pony Express; Sam Hamilton changed horses

here on the first eastbound trip in April 1860 (California Department of Parks and Recreation 1979).

In 1874, a Grange was established at Clarksville. Early settlers in the region who joined the Clarksville Grange include George Fitch and Joseph Joerger, who owned portions of the Plan Area.

Bass Lake is an early reservoir, established around 1895 or earlier. By 1925, its ownership had passed to the Diamond Ridge Water Company.

Mining in the project area undoubtedly began in the earliest years of the gold rush. Later mining included dragline dredging of Carson Creek at what was called the Jumbo Placer Mine in 1923 (Clark and Carlson 1956). Chromite mining also occurred on the property; several mines in the region were worked during World War I, and again in the early 1940s (Clark and Carlson 1956).

Until 1939, the U. S. Highway 50 from Sacramento to Placerville went through Clarksville. But the establishment of the nearby community of El Dorado Hills with a modern supermarket and other facilities and the rerouting of the highway north of the town caused the final decline of Clarksville as a service center for the region. There are no commercial enterprises and only a few residences remain.

Pre-Field Research

A records search was conducted at the North Central Information Center of the California Archaeological Sites Inventory at California State University, Sacramento. Three surveys have been conducted within portions of the Plan Area. Two sites were recorded during one of these surveys and were given the temporary numbers ED-1 and ED-2. Trinomials in the statewide accession system have not yet been assigned to these sites, so they are referred to by their temporary numbers. Three other site locations were reported to exist in the Plan Area, outside the previously surveyed areas.

One State Historic Landmark (SHL) lies within the Plan Area, SHL 699, marking the Mormon Tavern site, which was a popular stage stop and a remount station of the Central Overland Pony Express. Outside the Plan area at the junction of Green Valley and Deer Valley Roads, near the northeastern boundary of the Plan Area, is SHL 747, marking the Coloma Road.

Field Survey

The portions of the Plan Area indicated in Figure 13-1 were surveyed on foot on February 16-20 and 23-24, 1987. The two

previously recorded sites were revisited, and the reported sites were recorded. In all, there are 29 archeological sites within the surveyed area and 31 isolated features. One site, EDH-21, extends onto private property, and only a portion of the site could be recorded. All site forms are on file at the North Central Information Center. Additional site recordation on EDH-2 and EDH-5 was conducted on April 13-17 and 21, 1987. An additional survey was conducted on May 28 and 29, and June 1, 1987.

The Clarksville Cemetery also lies within the Plan Area. It was not recorded as a site because its boundaries are documented on the USGS topographic quadrangle, and a record has been published detailing the decedents and all information from the markers (Bayless and Mello 1982).

A number of prospect pits, glory holes, and tailings exist throughout the Plan Area. They are the physical remnants of exploration and mining.

In the areas where gold-bearing gravels are located in the Sierra, miners attempted to locate profitable areas to work, or have worked the streams. Except where a concentration of activities or features exists, this type of feature has not been recorded. It is impossible to date the features, and they have no research value.

Rock piles resulting from the clearance of fields also were not recorded. It is impossible to determine their creation date, and they have no research value.

A local resident reported that an Indian cemetery exists on the north side of U. S. Highway 50, south of Tong Road and east of Silva Valley Road. No physical trace of this cemetery was found during the field survey. An interview with Jess Tong revealed that there are several historic period graves in an area of potential impact. The site was visited and Mr. Tong was able to define the approximate boundaries. The corners were staked, and the precise location will be surveyed.

Recorded Sites

Table 13-1 lists the recorded sites.

ED-1. The site is a bedrock mortar station with five cups and a grinding slick. These are in two large, flat bedrock outcrops. The site has no associated midden (cultural deposit), and the only artifact found was a broken, modified cobble mano. The milling station is in a grove of live oak trees, 15 meters north of the small stream.

ED-2. The site is a historic period structural remnant, with associated bedrock mortars, that lies on the east side of

Table 13-1. Prehistoric and Historic Sites

Site No.	Prehistoric		Historic									
	Midden	Bedrock Mortar	Isolated Cabin/ Structure	Mining/ Ranching Complex	Ditch	Dam	Road	Rock Fence/ Wall	Surface Artifacts/ Historic Debris	Corral	Prospect Pit/ Glory Hole	Well
ED-1		X										
ED-2		X	X						X			
EDH-1				X		X	X		X			X
EDH-2				X	X	X		X		X		X
EDH-3		X						X				
EDH-4				X			X	X	X		X	
EDH-5		X		X	X	X	X	X		X	X	
EDH-6		X										
EDH-7		X										
EDH-8			X						X			X
EDH-9				X					X			
EDH-10			X									
EDH-11	X			X	X				X			
EDH-12		X										
EDH-13				X	X							
EDH-14			X						X			
EDH-15			X				X			X		
EDH-16			X								X	
EDH-17				X			X					
EDH-18		X										
EDH-19		X										
EDH-20		X										
EDH-21	X	X										
EDH-22			X						X			
EDH-23			X									
EDH-24			X									
EDH-25			X									
EDH-26		X										
EDH-27		X										
EDH-28			X									
EDH-29				X	X	X	X					

Source: Peak & Associates, Inc. 1987.

Carson Creek. The structure was constructed of dry-laid stone with 32-inch-wide walls. The interior dimensions are 8 feet 4 inches by 11 feet. The northwest wall that faces the creek has an arc opening to the interior. This measures 27 inches across at the back and 56 inches on the front. The arc probably was the hearth area. The walls have collapsed somewhat so that they are, at the maximum, 34 inches high. An olive green neck from an ale/porter/sweet wine bottle and a few glass and metal fragments are associated.

Overlooking the creek and immediately northwest of the structure is a large exposure of bedrock with five mortar cups ground into the surface. One additional smooth area may be an incipient mortar cup. No prehistoric period artifacts were found here, and troweling of the dark soils around the structure failed to produce lithic artifacts. One mortar cup contained rusted metal scraps and a glass shard.

EDH-1. This is the remnant of an enclosure surrounding a home and gardens, and associated features of the ranch. The enclosure is formed by a series of poured concrete pillars that were stuccoed and painted red and green. The pillars formed a large rectangle, and the entry to the enclosure is on the east. The pillars were connected across the top with sections of pipe, and presumably some fencing material attached to these. The entry walkway is lined by low walls, and a series of flat, concrete slabs with designs are traced into their surface. One is dated "33." Within the enclosure are two features, a large "shrine" of rock with a concrete tub below, and a four-compartment, concrete "bath." Outside the enclosure are a number of features--two walls, a watering trough, dam and water storage tank, and a rock foundation for a barn, as well as historic debris, which is both inside and outside the enclosure. It is difficult to determine the original configuration of features within the enclosure, and impossible to determine the function of most of the features.

EDH-2. EDH-2 is a well-preserved, mud-mortared stone cabin on a drainage, with a rocklined well, collapsed rock oven, and several fig trees. Two other small structures of unknown use are near the associated corral. The structures and corral are made of dry-laid rock. In addition, a number of rock features are on the drainage immediately upstream from the cabin. The site covers a large area, and a scaled map of the entire site could not be accomplished using tapes and compasses. A detail map was prepared of the cabin area.

EDH-3. South of EDH-2, the site has a bedrock mortar station on each side of the drainage. The cups are all shallow, and associated are three sections of a historic rock wall.

EDH-4. In 1984, the site complex was identified as simply a hearth. The present survey found not only a dry-laid stone hearth and partial wall of a cabin, but also a large,

semisubterranean dry-laid stone cabin on the hillside. Above the cabin is extensive rock wall. Near the hearth is a large prospect pit, and an improved ford is on the creek below the historic period features. A number of artifacts were found at this site, partially because of several holes dug by vandals near the hearth. The artifacts are from the early gold rush years (1848-1850s). Vandals recently left trash at the site.

EDH-5. The site is a vast complex of both historic and prehistoric features extending over a mile. A preliminary map and site form were prepared, but the site's size precludes accurate mapping and recording at this time. The prehistoric features include a number of bedrock mortar stations along Carson Creek. Historic features include eight dry-laid stone structures/structural remnants, two large stone corral areas, a dam and rock-lined ditch system, one stone and packed-earth check dam, a major roadway with dry-laid rock supports and bridge abutments, several minor roadways and ditches, rock cairns, one collapsed frame structure, a number of dry-laid rock terraces and supports, introduced vegetation, and mining prospect pits and tailings.

The site may represent an extension of the town of Clarksville. One of the corrals was identified and reported by Peak & Associates, Inc. (1984).

EDH-6. Identified in 1984 by Peak & Associates, Inc. the site is a bedrock outcrop with five cups ground into the upper surface. Four cups are well-developed. The site is on the south bank of a branch of Carson Creek.

EDH-7. Also a bedrock mortar station, the site consists of two shallow cups ground into a single boulder. The boulder lies on a hillslope near Bass Lake.

EDH-8. The site consists of the dry-laid rock walls of a rectangular, semisubterranean cabin, and a well. An 1866 map of the region indicates that this structure was "Crissy Cobb's house." The site lies along an old roadway and overlooks a small reservoir.

EDH-9. Probably dating from the 1920s or 1930s, the site consists of two collapsed frame structures. The house remnant lies near a ford of Allegheny Creek, and a number of household items surround the structure. The barns are on the hill above the structural remnants.

EDH-10. The site lies above a section of Allegheny Creek that was extensively mined for gold. The site consists of a dry-laid stone hearth and partial cabin walls. No other features are present and no artifacts were found.

EDH-11. The site has both prehistoric and historic components. The prehistoric component is a midden (cultural deposit)

at least 50 centimeters in depth on a terrace over Allegheny Creek. The midden has been disturbed by bottle collectors' excavations in the materials overlying it. A number of prehistoric period artifacts were found, including two granite pestles, an obsidian Desert Side Notched projectile point, chert flakes, and a granitic mano fragment. Non-artifactual material relating to the prehistoric occupation of the site included burned bone, charcoal, and shell fragments. A number of historic period artifacts were found in this area, including bottle fragments, porcelain fragments, metal scraps, and a tobacco tin as well as modern trash. Other features at the site include a dry-laid stone structure and stone-line tailrace along a tributary to Allegheny Creek, and a dry-laid stone hearth with a possible second hearth to the north of the tributary stream.

EDH-12. This prehistoric site consists of five mortar cups ground into the surface of a single bedrock outcrop. The site is on a narrow terrace on a steep-banked section of Allegheny Creek.

EDH-13. At the junction of Allegheny Creek and an unnamed drainage, there are remnants of at least two dry-laid stone cabins. Structure 1 is quite large and lacks a hearth. A small retaining wall and ditch have been built upslope to protect the cabin. Structure 2 is somewhat smaller and has a hearth. A rectangular pile of stone that possibly represents a third cabin is next to Structure 1.

EDH-14. The central portion of the Plan Area contains the extensively altered remains of a large, two-story frame structure. The house corresponds to the location given on an 1866 plat for "G. C. Fitch's house." The house had a one-story addition to the rear, and had extensive alterations in the 1940s. The frame structure was covered with stucco, and had new masonry porches added and a masonry wall across the front of the yard. Two barns are nearby, but these have been extensively altered and were not recorded. The structure was used until 1970, when it burned.

EDH-15. The site consists of a dry-laid stone circular corral, rock fences on both sides of a drainage, and a dry-laid, semisubterranean rock structure. A large amount of earth was excavated on a steep bank and the structure is built with the natural bedrock in portions of the hillside wall. The chimney is built into one of the walls, primarily supported by the bank. The chimney is about 10 feet high and is slightly collapsed.

EDH-16. EDH-16 consists of a small, dry-laid stone hearth. Other foundations and other evidence of artifacts or features were not found.

EDH-17. The site is on an open hilltop area and represents the remnants of ranch outbuildings. The site contains a major rock fence, and a single course of stone laid out from this

fence to form the foundations for frame structures. The rock wall would have provided a wind break for the structures. There is no permanent water source near the site, and its use would have been seasonally limited.

EDH-18. The site lies on an open hillside, some distance from any water source. It consists of four mortar cups ground into the top of a single boulder. There is no other evidence of artifacts or a cultural deposit.

EDH-19. The site is comprised of two bedrock mortar stations near Bass Lake. Station A contains four cups ground into a single boulder and Station B has one cup.

EDH-20. EDH-20 is also a bedrock mortar station, consisting of four cups ground into a single boulder. No other cultural materials are present.

EDH-21. The site could only be partially recorded. It extends onto private property, and the owner refused access to Peak & Associates. Two bedrock mortar stations lie on EDHI property. Station A has two cups and Station B contains seven cups. Two more bedrock mortar stations are on the private parcel and a midden deposit. The owner reports finding "five arrowheads plus a handful of flint" during the construction of a pad for a shed. No midden could be found on the EDHI property.

EDH-22. The site is the cellar of a home reportedly dating from the late 1840s. The cellar is cut into the bank of a drainage, and is partially rock-lined. The cellar has been used as a trash pit since abandonment of the structure. Some of the debris in the cellar dates to circa 1900-1920, suggesting abandonment at about the turn-of-the-century. Wood has been placed over the debris to fill in the depression.

EDH-23. The site is a large, dry-laid stone structure. The cabin is semisubterranean, with an apparent entry on the west. No hearth could be defined. The southern wall has a shelf built in. The structural remnant may actually be the cellar of a large frame structure.

EDH-24. The site is the remnant walls of a small, dry-laid stone cabin. The cabin lies on a tributary to Allegheny Creek that was extensively mined.

EDH-25. EDH-25, on the side of a gently-sloping hill, is the collapsed remnant of a mud-mortared, stone cabin. Near the cabin is an improved spring that is still in use for watering the cattle in this arid grassland portion of the Plan Area. The nearby spring undoubtedly caused the selection of this site for the cabin.

EDH-26. This site is a fairly large complex of bedrock mortars and rock art. There are found boulders containing

mortar cups. One of the boulders also contains two small cupules. There is also a second boulder containing five capules. The cupules are a form of rock art. Researchers have suggested a variety of interpretations for the rock art; the most commonly accepted function is that of a form of fertility magic (Payen 1965). Two flakes were also found at the site.

EDH-27. EDH-27 is also a prehistoric site. It is comprised of two bedrock mortar stations on opposite sides of an unnamed drainage. The mortar cups of Station B are quite deep, with many exceeding 25 centimeters in depth. No other cultural materials were found.

EDH-28. The site is the remnant of a small mud-mortared cabin. The cabin lies near a drainage. Later hydraulicking or sluicing eroded the bank of the ravine, and part of the cabin was destroyed by the subsequent erosion. The cabin wall remnant includes the collapsed hearth. No other cultural material or artifacts were found at the site.

EDH-29. The site is a large complex of historic features with an associated bedrock mortar station. The site includes the remnants of a dry-laid stone stamp mill, several dry-laid stone terraces, a road trace and rock bridge abutments, and the Tong family cemetery. The mine adit (opening) is located under U. S. Highway 50. The stamp mill machinery was sold about 70 years ago to Bob Craig and moved to another mine in the region. The cabin's occupancy was related to the operation of the mine (Jess Tong pers. comm.).

There is also a small reservoir with a circular rock wall on the hill above the mill.

The Tong cemetery includes a fenced-off area, with all family graves, as well as the grave of a family friend dating to 1856. Outside the fence, there is one grave with a headstone (no name, but a date of 1869), and a number of unmarked graves, distinguishable only by rings of emplaced rock.

Isolated Features

The survey team recorded a number of isolated features. The team prepared forms for each, and plotted locations on the maps included in the complete report. Most of the isolated features are rock walls which are not considered significant. Table 13-2 identifies each feature.

Table 13-2. Isolated Features

Number	Rock Wall	Bedrock Mortar	Historic Roadway	Mining Features	Other	Comments
1		X				
2		X				
3			X			
4				X	X	Glory hole, historic artifacts
5	X					
6	X					
7	X					
8		X				
9	X					
10				X		Ditch
11			X			
12					X	Rock circles
13	X					
14	X					
15	X					
16	X					
17	X					
18			X			
19	X					
20	X					
21	X					
22	X					
23	X					
24	X					
25		X			X	Lambing pen
26	X					
27	X			X		
28					X	Dam
29	X					
30	X					
31	X					

Source: Peak & Associates, Inc. 1987.

Impacts

Archival Research

After the field survey was completed, a program of archival research was conducted to provide information to aid in the evaluation of the historic sites, with respect to their eligibility to the National Register of Historic Places.

The following facilities were visited: El Dorado County Recorder's Office, Surveyor's Office, California State Library, Bureau of Land Management, and the Bancroft Library. Primary records on file with the county that were utilized in the study include homesteads, patents, preemptions, deeds, mortgages, burial permits, and death records. Cartographic sources include General Land Office plats dating to 1858 and 1866, official county maps from 1895, 1908, and 1925, and the 1892 topographic quadrangle. Other primary sources include the 1860, 1870, 1880, 1900, and 1910 census schedules; 1850-1880 special agricultural schedules; El Dorado County Great Registers of Voters 1867-1977; and several newspapers. Secondary sources include various published biographies, the 1883 county history (Sioli), and a recent regional history (Wilson 1986).

Interviews were also conducted with a number of knowledgeable informants. The results of the archival research are described in Appendix G.

Table 13-3 presents a summary of site types by number and mitigation.

Impacts to the following sites are considered less than significant and no mitigation is required. Preservation of the bedrock mortars and rock walls is preferable, but not essential. If possible, the boulders containing the mortars should be left in place or relocated onto residential parcels or open space. ED-1, ED-2 (Prehistoric), EDH-1, EDH-3, EDH-5 (Prehistoric), EDH-5 (Ditch and Road), EDH-6, EDH-7, EDH-9, EDH-10, EDH-12, EDH-14, EDH-16, EDH-17, EDH-18, EDH-19, EDH-20, EDH-21 (Prehistoric), EDH-22, EDH-23 (Prehistoric), EDH-27, EDH-29 (Prehistoric), and the isolated features. The isolated features include three bedrock mortar stations with one shallow cup each, 20 rock fence lines/walls, three improved roadbeds, three mining features, a dam, a lambing pen, and a small rock feature, probably the remnants of a camp fire circle.

Impacts to the Clarksville Cemetery are considered less than significant because California law requires that access to a cemetery be provided. As long as there are provisions for access to the cemetery, no further recommendations are necessary.

Table 13-3. Site Significance and Mitigation Summary

Site No.	Prehistoric		Historic			No Additional Mitigation		Additional Mitigation Required		
	Midden	Bedrock Mortar	Isolated Cabin/ Structure	Mining/ Ranching Complex	Other	Preservation Preferable But Not Essential	No Research Value	Test Excavation	Avoid	Protect
ED-1		X				X				
ED-2		X				X				
ED-2			X					X		
EDH-1				X			X			
EDH-2			X					X		
EDH-3		X				X				
EDH-3					X	X				
EDH-4				X				X		
EDH-5		X				X				
EDH-5				X				X		
EDH-6		X				X				
EDH-7		X				X				
EDH-8			X					X		
EDH-9				X			X			
EDH-10			X			X				
EDH-11	X							X		X
EDH-11				X				X		
EDH-12		X				X				
EDH-13				X				X		
EDH-14			X				X			
EDH-15			X					X		
EDH-15					X			X		
EDH-16			X			X				
EDH-16					X	X				
EDH-17				X			X			
EDH-18		X				X				
EDH-19		X				X				
EDH-20		X				X				
EDH-21	X							X		
EDH-21		X				X				
EDH-22			X				X			
EDH-23		X				X				
EDH-23			X					X		
EDH-24			X					X		
EDH-25			X					X		
EDH-26		X							X	
EDH-27		X				X				
EDH-28			X					X		
EDH-29		X				X				
EDH-29				X				X	X	
EDH-29					X				X	
Clarksville Cemetery					X					X
Hall/Richmond Cemetery					X					X
Isolated Features						X	X			

Source: Peak and Associates, Inc. 1987.

Impacts to unknown sites obscured by vegetation or historic activities are considered potentially significant. To reduce to a less-than-significant level, stop work if cultural resources are discovered during construction.

Impacts to the following sites are considered potentially significant, and mitigation by test excavation is recommended to reduce impacts to a less-than-significant level. ED-2 (Historic), EDH-2, EDH-4, EDH-5 (Structures), EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic), EDH-13, EDH-15, EDH-21 (Prehistoric), EDH-23, EDH-24, EDH-25, EDH-28, and EDH-29 (Other Historic Features).

Impacts to the Hall/Richmond Cemetery are considered potentially significant. To reduce to a less-than-significant level, several options are possible including protection or relocation.

Impacts to the following sites are considered significant. To reduce to a less-than-significant level, the Specific Plan should be designed to avoid Sites EDH-26, EDH-29 (Tong Cemetery), EDH-29 (Historic). If construction cannot be planned to avoid these sites, other mitigation is required.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

None.

Mitigation Measures Recommended by the EIR Consultant

Stop Work if Cultural Resources are Discovered During Construction. It is possible that vegetation, siltation, or historic activities may have obscured surface evidence of additional sites in the Plan Area. If artifacts or unusual amounts of stone, bone, or shell are uncovered during construction activities, work should be halted within 100 feet of the find and a qualified archeologist consulted for on-the-spot evaluation. If the bone appears to be human, the El Dorado County Coroner and The Native American Heritage Commission (916/322-7791) must be contacted.

Require Test Excavations as a Condition of Approval on the Tentative Subdivision Maps. A test excavation is basically the methodical digging of a limited number of 1- by 1-meter units in 10 cm increments to determine:

- the depth of the cultural deposit;
- the cultural contents of the site in terms of kinds and numerical quantity;

- presence of a faunal constituent;
- presence of time-sensitive artifacts that could be analyzed and compared with artifacts from other sites that have had a temporal sequence established; and
- the potential of the site to address pertinent regional research questions.

The data yielded by test excavations would reveal whether further mitigation measures should be taken, such as site protection or data recovery excavations. The test excavations may also prove to be an adequate sample of a site and allow total land usage of the area.

A summary of which villages require test excavations is presented in Table 13-4.

ED-2 (Historic), EDH-2, EDH-4, and EDH-25. As a condition of approval for the tentative maps for Villages F and G and adjacent golf course, test excavations should be undertaken to determine the presence, nature, and extent of subsurface archeological materials. Based on the results of the test, further mitigation measures may be necessary. These should be undertaken in consultation with the El Dorado County Planning Department.

EDH-5 (Structures). All of the structures listed below need to have text excavations to determine the presence, nature, and extent of subsurface cultural materials. The tests should be undertaken prior to the approval of the listed villages and adjacent open space or golf courses in which the structures lie. Any further studies that may be required to mitigate impacts should be conducted in consultation with the El Dorado County Planning Department.

Structure 1A	Village A
Structures 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	Village C
Structures 13, 14, 15	Villages C, E

EDH-8. As a condition of approval of the tentative map for the Village Green/Community Center, Villages H and I, and adjacent golf course, the site should be test excavated to determine if subsurface archeological materials exist. Based on the results of this test, further mitigation measures may be deemed necessary and should be undertaken in consultation with the County Planning Department.

EDH-11 (Prehistoric). Cultural resources must be evaluated with respect to their eligibility to the National Register of Historic Places. The criteria used to evaluate

Table 13-4. Cultural Resources Test Excavations

Village	Test Excavations
A	EDH-5 Structure 1A
C	EDH-5 Structures 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
E	EDH-5 Structures 13, 14, 15
F, G, and Golf Course	EDH-2 (Historic) EDH-2, EDH-4, and EDH-25
H, I, and Golf Course	EDH-8
I	EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic)
K	EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic), EDH-15, EDH-23, EDH-24, EDH-28
L	EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic), EDH-23, EDH-24, EDH-28
M	EDH-8, EDH-11 (Prehistoric), EDH-11 (Historic), EDH-13, EDH-23, EDH-24, EDH-28
S	EDH-21

historic and prehistoric sites in determining their potential to the National Register are as follows:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded or may be likely to yield information important in prehistory or history.
>
> Ordinarily, cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register.

The prehistoric site is potentially eligible to the National Register under Criterion d: surface data are inadequate to assess the potential for the site to provide data important in understanding the prehistory of the area. A test excavation of the site is proposed.

It is recommended that a minimum of four 1- by 1-meter units be excavated at the midden area of EDH-11.

The test excavation should take place as a condition of approval of the tentative subdivision maps for Villages I, K, L, and M, which surround the site. Any further mitigation measures should be undertaken in consultation with the El Dorado County Planning Department.

EDH-11 (Historic). Test excavations are advised to determine the presence of historic cultural materials. These excavations should be required as conditions of approval for the tentative subdivision maps on Villages I, K, L, and M. Any

further mitigation measures required should be undertaken in consultation with the El Dorado County Planning Department.

EDH-13. The site lies at the edge of Village M. Before the tentative map is approved, test excavations of the structures should be conducted to determine whether the site contains subsurface materials. Additional work may be required to mitigate the resource, and this should be undertaken in consultation with the El Dorado County Planning Department.

EDH-15. The site lies at the edge of the golf course and Village K. Excavations should be conducted to determine the nature and extent of any subsurface materials. In addition, the style of structure and construction technique should be examined. Detailed scale drawings of the cabin should be made in conjunction with the excavations. These tasks should be conducted as a condition of approval of the tentative map for Village K. Based on the results of this study, further mitigation measures may be required, and these should be undertaken in consultation with the El Dorado County Planning Department.

EDH-21. The portion of the site that lies on EDHI's lands consists of two bedrock mortar outcrops. These have been completely recorded and no further work is necessary. If possible, the site should be preserved.

If a land use change occurs for the non-EDHI parcel containing the remainder of the site (villages), the midden and bedrock mortars should be recorded and a complete field survey conducted. Test excavations would be necessary to determine the extent, nature, and depth of deposit. Further mitigation, such as data recovery or capping of the site, may be required.

EDH-23, EDH-24, and EDH-28. All three structures lie in the proposed open space. The three structures need to have test excavations conducted to determine the presence, nature, and extent of subsurface cultural materials. The test should be undertaken prior to the approval of Villages K, L, and M. Any further studies that may be required to mitigate impacts should be conducted in consultation with the El Dorado County Planning Department.

Protect or Relocate the Hall/Richmond Cemetery. Based on the specific land use planned, there are several options possible for the site. One possibility would be to record the location of the cemetery on the deed for the parcel, then to protect the cemetery either through fencing, project design, carefully-emplaced fill, or some combination of these methods. Another option might be the disinterment of the remains in the graves and relocation to another cemetery.

Design the Specific Plan to Avoid Impacts to Sites

EDH-26. This site, although primarily a bedrock mortar site, also contains rock art. Rock art has associated magico-religious significance to the Indian people. Since the modern Nisenan people have particular concerns about this type of site, preservation in place is essential for the rock art, even though the site has been completely recorded. The planned road through the open space area should be designed to avoid this site. All construction impacts also should be avoided. If this site cannot be protected, it may be necessary to contact local Native American people and discuss their concerns regarding this site.

EDH-29 (Tong Cemetery). The cemetery is much larger than the area presently fenced off. Many graves are not marked. The cemetery covers the hilltop, extending to the existing Caltrans right-of-way. The freeway on-ramp must be designed to avoid any impact to this area. As the zone of potential construction impact is usually much larger than the structure itself, this large area should be considered in the planning process. If all potential impacts, including but not limited to cutting, filling, yarding of equipment and materials, construction access, and ingress by construction personnel, cannot be avoided, the on-ramp should be relocated.

EDH-29 (Other Historic Features). If construction cannot be planned to avoid these impacts, additional research may be necessary to identify these features and to assist in establishing their significance. Test excavations may be necessary to determine the presence, extent, and nature of any subsurface cultural materials.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to cultural resources are included in Appendix I.

Chapter 14
Aesthetics

Aesthetic qualities refer to those visual resources of a landscape that are aesthetically pleasing to a viewer. Different viewers could have substantially different opinions about a landscape; therefore, any assessment of aesthetic qualities is, by nature, subjective.

Setting

Regional

The Plan Area is located in the foothills of the Sierra Nevada mountains immediately above the Sacramento Valley in western El Dorado County. The area is characterized by rolling, grassy hills. Terrain ranges from gently sloping hills to wooded ravines containing perennial and intermittent streams. Thus, the region provides considerable visual diversity. The predominant visual makeup in the region is urbanization in the valley, a mixture of urban land uses and natural areas in the foothills, and scattered development closer to the Sierra Nevada.

Natural areas in the vicinity share characteristics common to one of three ecosystem types: grasslands, oak woodland, or riparian. Grasslands cover most of the flat to gently rolling hills, oak woodland is common throughout the foothills, and riparian is dependent on the seasonable availability of water.

Plan Area

Onsite Views. The Plan Area is undeveloped; therefore, all of the visual resources are natural except for U. S. Highway 50, a water tank, Clarksville Cemetery, the PGandE Clarksville Substation, and scattered rural residential uses (see Chapter 4, "Land Use" for further discussion). Grassland covers approximately 63.5 percent (2,594 acres) of the Plan Area. The hills are green from the beginning of fall rains in October or November until early May. From May on, grassy areas become dry and the hills appear yellow, as is typical for the Central Valley and foothills.

Blue Oak woodland occupies the arid and exposed sites in the Plan Area and is most common on steep south- and west-facing

hillsides. Live Oak forest occurs in large areas in the northern portion of the Plan Area on north- and east-facing slopes, in protected canyon bottoms, and drainages. Riparian habitats are variable in the Plan Area due to mining history, location of watershed, seasonal location of surface water, and grazing. See Chapter 12, "Vegetation, Wildlife, and Aquatic Resources" for further discussion of these habitats.

The PGandE/SMUD transmission line easement, with its high voltage lines and towers, crosses the northern Plan Area in an east-west direction (see Figure 14-1).

Carson Creek runs through the Plan Area. Vegetation along Carson Creek is very lush (see Figure 14-2). Water serves as a dominant visual resource because of its contrast with predominantly solid land, diversity of pattern, and ability to reflect light or color. The creek varies in width during most of the year. Riparian vegetation along the banks includes cottonwood, willow, and button bush mixing with interior live oak and buckeye (see Chapter 12, "Vegetation, Wildlife, and Aquatic Resources" for further discussion).

Offsite Views. Offsite views of the Plan Area that are accessible to the public are possible from U. S. Highway 50 and White Rock Road to the south (see Figure 14-3), Bass Lake Road to the east, and El Dorado Hills Boulevard to the west (see Figure 14-4). The views from U. S. Highway 50 and El Dorado Hills Boulevard include grassy hills with oak clusters on the distant hills.

Scenic Highways Element. The Scenic Highways Element of the El Dorado County General Plan (1984) designates major corridors to enhance community identity and preserve highways with exceptional scenic value. County scenic routes may also be designated, by the state, as "Official County Scenic Highways." To be designated, the county must identify routes and prepare a program for their protection. Local scenic routes proposed for official designation in the vicinity of the Plan Area include Green Valley Road. Green Valley Road is a major county road between Folsom Lake and Placerville. Typical views from Green Valley Road include rolling hills and open space.

Viewshed Analysis. A viewshed analysis (see Figure 14-5) has been prepared for the Plan Area. The map graphically portrays those portions of the Plan Area that are visible from U. S. Highway 50 while travelling east. From U. S. Highway 50, only a small portion of the Plan Area can be seen, because of the rolling topography.

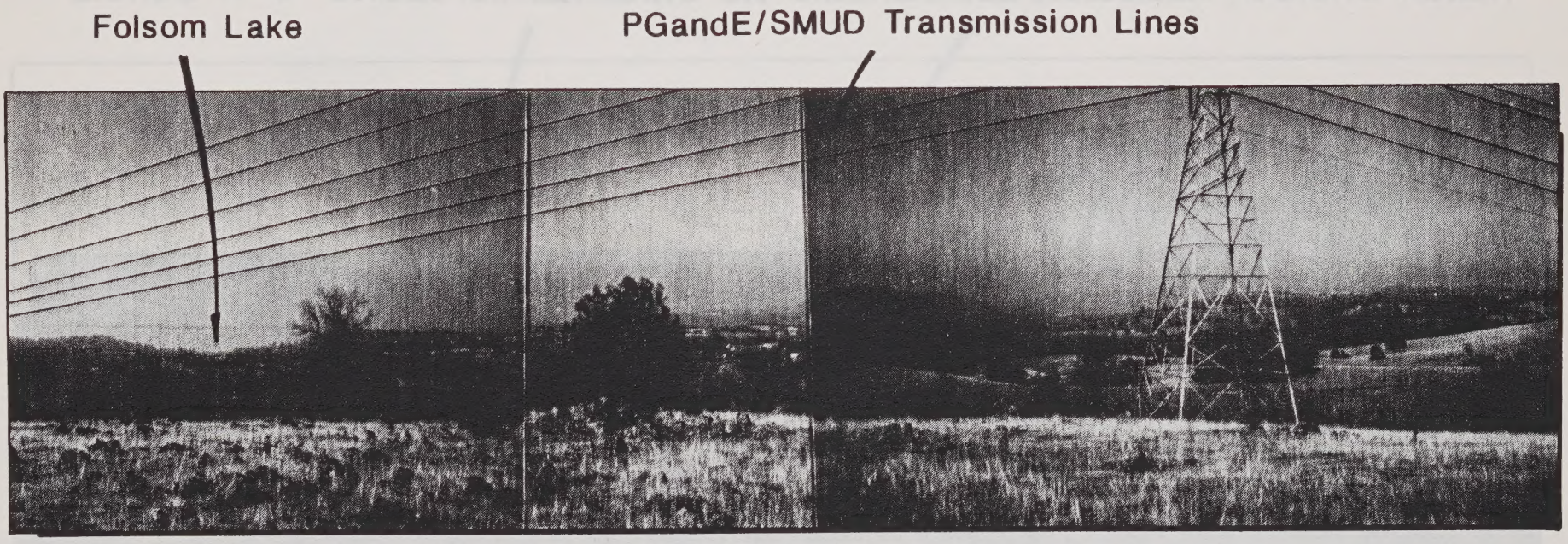

FIGURE 14-1. PHOTO 1. STANDING ON-SITE LOOKING NORTH AT PGandE/SMUD TRANSMISSION LINES (See Figure 14-5 for location of photo)

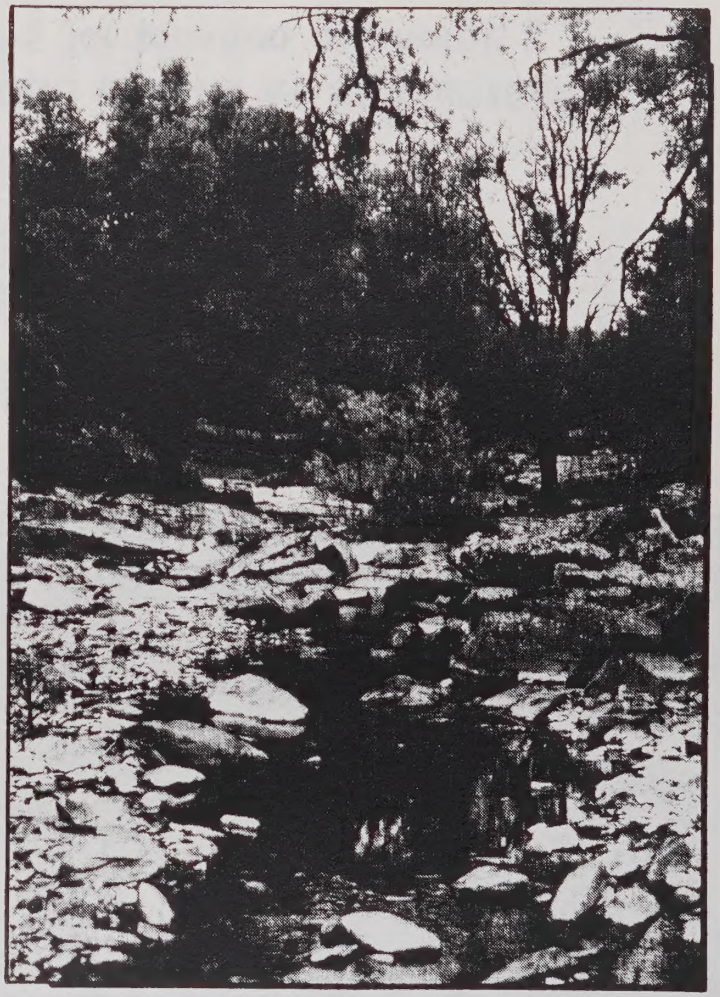

FIGURE 14-2. PHOTO 2. STANDING ON-SITE IN CARSON CREEK LOOKING NORTH
(See Figure 14-5 for location of photos)

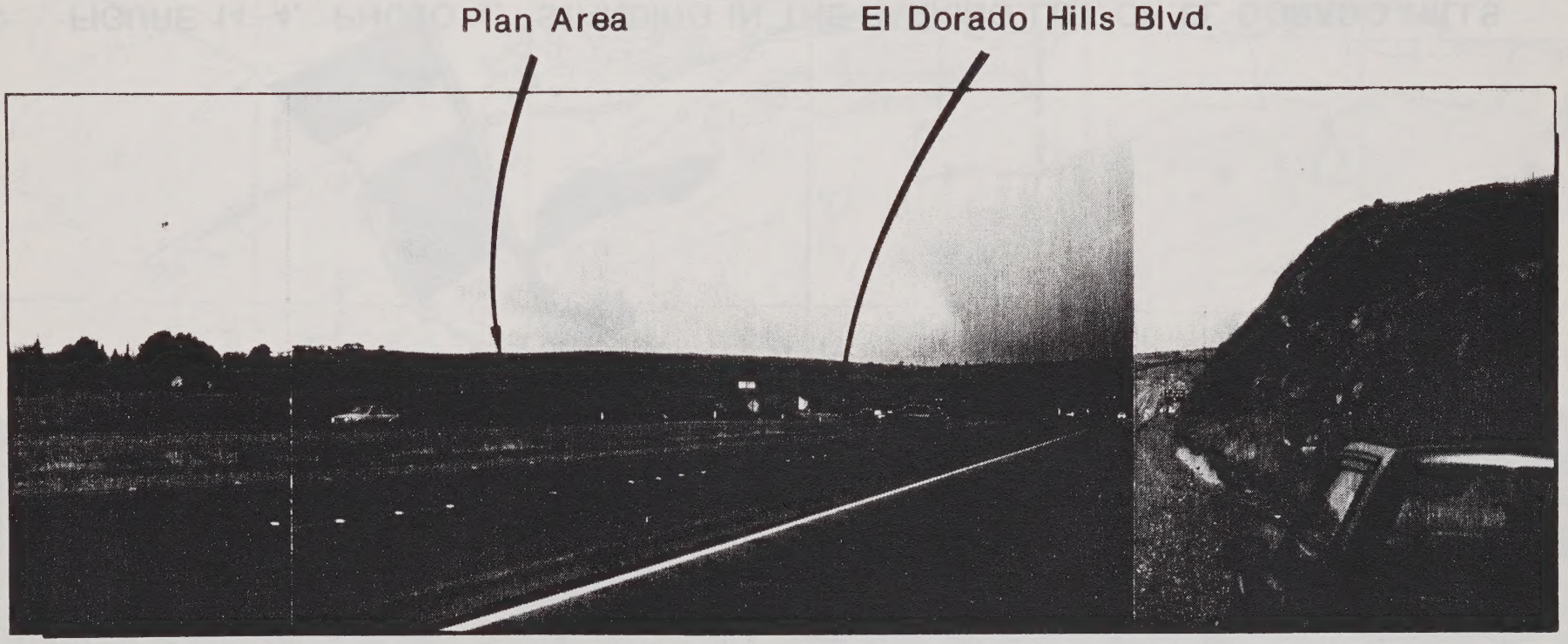

FIGURE 14-3. PHOTO 3. STANDING ON THE SHOULDER OF U.S. HIGHWAY 50 LOOKING EAST AT PLAN AREA (See Figure 14-5 for location of photo)

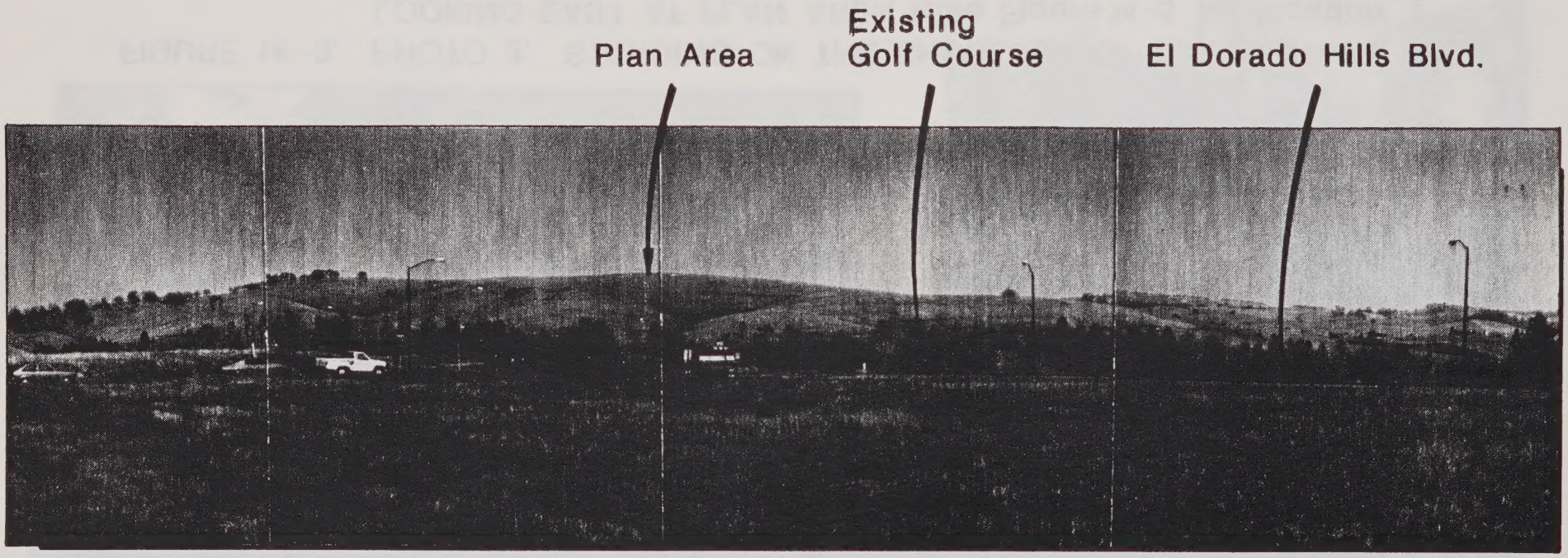

FIGURE 14-4. PHOTO 4. STANDING IN THE PARKING LOT OF EL DORADO HILLS BUSINESS PARK LOOKING EAST AT PLAN AREA (See Figure 14-5 for location of photo)

EL DORADO HILLS

EL DORADO COUNTY, CA

VIEWSHED ANALYSIS OF THE PLAN AREA

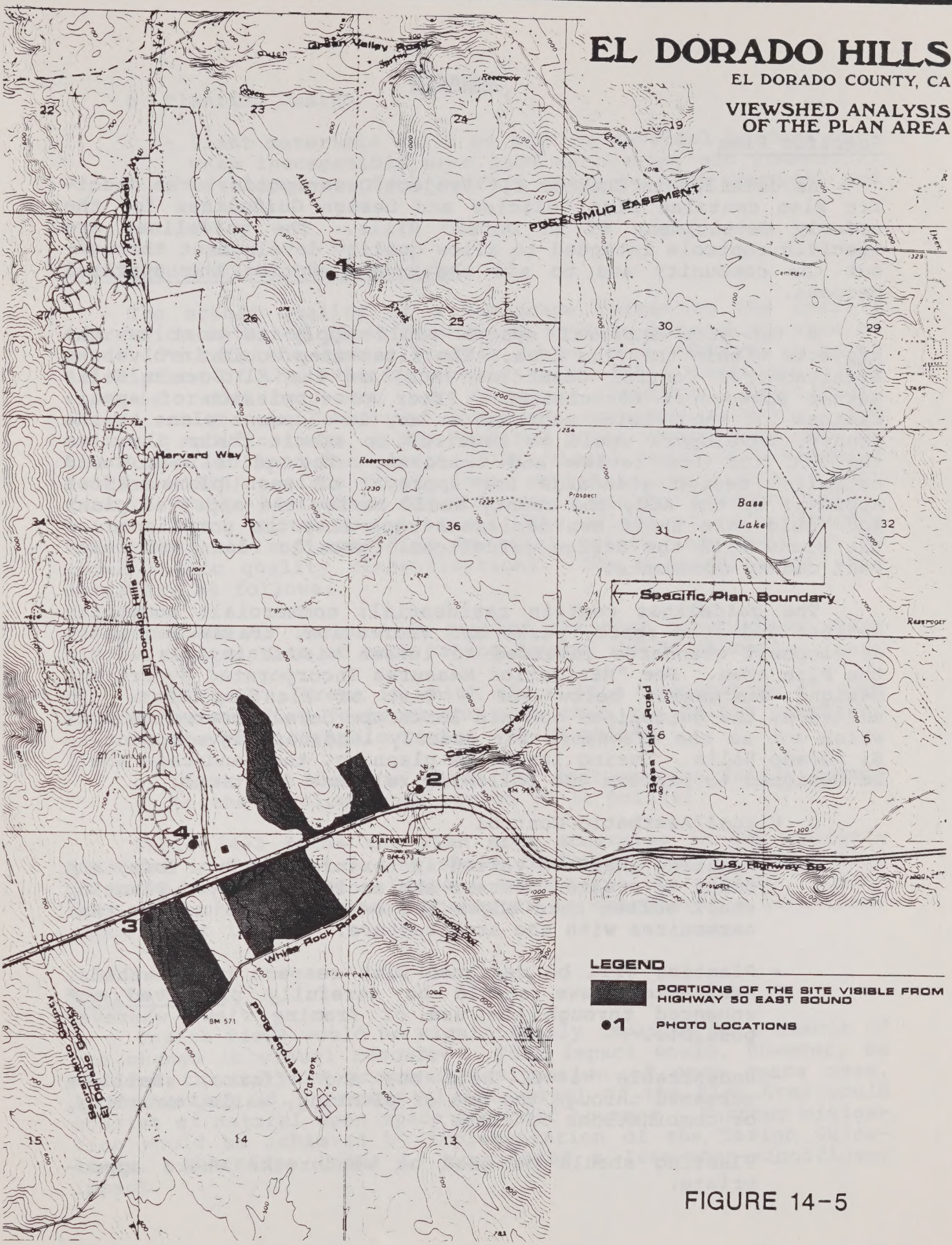

FIGURE 14-5

Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California

Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California

Impacts

Specific Plan

As detailed in Chapter 2, "Project Description," the Specific Plan contains Plan Policies and Design Guidelines for the orderly development of El Dorado Hills. The guidelines are specific controls intended to allow quality development throughout the community and to aid the county during the approval process.

A two-step approval system would apply to most of the projects within the Plan Area. The first step would involve the Architectural Control Committee (ACC) of the El Dorado Hills Master Homeowners Association. Prior to submission of applications for subdivision maps and/or any development plans to the county, developers would be required to submit their plans to the ACC for its review and approval. The guidelines would establish design standards for approval of such plans. After approval by the ACC, the county would review the approved plans and would make their own decisions regarding the compliance of the plans with the design guidelines, Specific Plan, and relevant county documents.

The guidelines contain residential; commercial; community center; and open space, parks and recreation, trails and paths development standards intended to lessen visual impacts within the Plan Area. See "Mitigation Measures Incorporated by Project Design" discussion below for a list of Plan Policies. In addition, the guidelines contain landscape development standards which act as the framework for orderly landscape development in El Dorado Hills. During landscape planning, the landscape shall be designed to perform the following relevant functions:

- Visual/Aesthetic Control

  - Planting shall be varied in texture, height, form, and color to create interest and avoid monotony. Planting shall soften hard edges and be used in a manner that harmonizes with the architecture.

  - Planting will be designed with respect to viewsheds. Desirable views should be carefully preserved and enhanced through the use of framing views wherever possible.

  - Undesirable views, both on- and offsite, shall be screened through the use of planting, walls, mounding, or combinations of these.

  - Planting should be used as windbreaks where appropriate.

- Planting Design

  - Plant materials shall be used as physical buffers between incompatible uses such as housing and commercial development. Such buffers shall be both physical and visual.

Scenic Quality of the Plan Area

The scenic quality of a landscape refers to the overall impression retained after driving or walking through an area of land. To rate the scenic quality of an area requires a brief description of the existing scenic values of a landscape. The area is rated by seven key factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification. A standardized point system developed by the Bureau of Land Management (BLM) Visual Resource Management Program (1980) assigns great, some, or little importance to each factor. Table 14-1 shows the BLM scenic quality inventory/evaluation rating criteria and score. The values of each category are calculated and according to total points, assigned one of three scenic quality classifications. The classification criteria are as follows:

- Class A: Areas that combine the most outstanding characteristics of each rating factor (19-33 points).

- Class B: Areas in which there is a combination of some outstanding features and some that are fairly common to the physiographic region (12-18 points).

- Class C: Areas in which the features are fairly common to the physiographic region (0-11 points).

Table 14-2 rates the Plan Area according to the criteria provided in Table 14-1. As shown in Table 14-2, the Plan Area is considered to have a Class C scenic quality rating. Therefore, the change in scenic character is considered a less-than-significant impact.

Onsite Views

Onsite views would be significantly impacted as a result of the change in visual resource. This impact would, however, be reduced through the proposed designation of open space uses. Approximately 33.7 percent (1,390 acres) of the Plan Area would consist of natural open space and golf courses. Further mitigation would be achieved by implementation of the Design Guidelines. Therefore, this is considered a less-than-significant impact.

Table 14-1. Scenic Quality Inventory/Evaluation Rating Criteria and Score

	Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modifications
	High vertical relief such as prominent cliffs, spires, or massive rock outcrops; or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing, such as glaciers.	A variety of vegetative types in interesting forms, textures, and patterns.	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	Rich color combinations, variety, or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snow fields.	Adjacent scenery greatly enhances visual quality.	One of a kind; or unusually memorable; or very rare within region. Consistent chance for exceptional wildlife of wildflower viewing.	Free from aesthetically undesirable or discordant sights and influences; or modifications add favorably to visual variety.
BLM RATING	5	5	5	5	5	6	2
	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features present and interesting though not dominant or exceptional.	Some variety of vegetation, but only one or two types.	Flowing or still, but not dominant in the landscape.	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element.	Adjacent scenery moderately enhances overall visual quality.	Distinctive, though somewhat similar to others within the region.	Scenic quality is somewhat depreciated by inharmonious intrusions, but not so extensively that they are entirely negated; or modifications add little or no visual variety to the area.
BLM RATING	3	3	3	3	3	2	0
	Low, rolling hills, foothills, or flat valley bottoms. Interesting, detailed landscape features few or lacking.	Little or no variety or contrast in vegetation.	Absent, or not noticeable.	Subtle color variations, contrast, or interest; generally muted tones.	Adjacent scenery has little or no influence on overall visual quality.	Interesting within its setting, but fairly common within the region.	Modifications are so extensive that scenic qualities are mostly nullified or substantially reduced.
BLM RATING	1	1	0	1	0	1	-4

Source: Bureau of Land Management 1980.

Notes:

Class A: Areas that combine the most outstanding characteristics of each rating factor (19-33 points).
Class B: Areas in which there is a combination of some outstanding features and some that are fairly common to the physiographic region (12-18 points).
Class C: Areas in which the features are fairly common the physiographic region (0-11 points).

Table 14-2. Scenic Quality Inventory/Evaluation for the Plan Area

	Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modifications
	High vertical relief such as prominent cliffs, spires, or massive rock outcrops; or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers.	A variety of vegetative types in interesting forms, textures, and patterns.	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	Rich color combinations, variety or vivid color, or pleasing contrasts in the soil, rock, vegetation, water, or snow fields.	Adjacent scenery greatly enhances visual quality.	One of a kind; or unusually memorable; or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing.	Free from aesthetically undesirable or discordant sights and influences; or modifications add favorably to visual variety.
BLM RATING	5	5	5	5	5	6	2
PLAN AREA SCORE	0	0	0	0	0	0	0
	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features present and interesting though not dominant or exceptional.	Some variety of vegetation, but only one or two types.	Flowing or still, but not dominant in the landscape.	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element.	Adjacent scenery moderately enhances overall visual quality.	Distinctive, though somewhat similar to others within the region.	Scenic quality is somewhat depreciated by inharmonious intrusions, but not so extensively that they are entirely negated; or modifications add little or no visual variety to the area.
BLM RATING	3	3	3	3	3	2	0
PLAN AREA SCORE	0	0	0	0	3	0	0
	Low, rolling hills, foothills, or flat valley bottoms. Interesting, detailed landscape features few or lacking.	Little or no variety or contrast in vegetation.	Absent, or not noticeable.	Subtle color variations, contrast, or interest; generally muted tones.	Adjacent scenery has little or no influence on overall visual quality.	Interesting within its setting, but fairly common within the region.	Modifications are so extensive that scenic qualities are mostly nullified or substantially reduced.
BLM RATING	1	1	0	1	0	1	-4
PLAN AREA SCORE	1	1	0	1	0	1	0

PLAN AREA TOTAL POINTS: 7
Scenic Quality Classification: Class C

Source: Jones & Stokes Associates

Notes:
Class A: Areas that combine the most outstanding characteristics of each rating factor (19-33 points).
Class B: Areas in which there is a combination of some outstanding features and some that are fairly common to the physiographic region (12-18 points).
Class C: Areas in which the features are fairly common the physiographic region (0-11 points).

Implementation and adoption of the Specific Plan would impact Carson Creek. According to the Design Guidelines, a 100-foot-wide undeveloped buffer would be established along Carson Creek. Therefore, this is considered a less-than-significant impact.

Offsite Views

Urban development is proposed for the Plan Area. The change from vacant grasslands to urban development would be the primary visual impact. The significance of the impact would depend upon the location from which the view is perceived and the individual's perception of the change.

The most prominent change to viewers would be from U. S. Highway 50, due to the current sensitivity level. Visual sensitivity is determined by frequency of travel through an area (Bureau of Land Management Visual Resource Management Program 1980). As shown in Figure 4-5, however, only a small portion of the Plan Area would be visible from U. S. Highway 50, due to the rolling topography. In addition, the Plan Area would be adjacent to the developed community of El Dorado Hills currently visible from U. S. Highway 50 rather than an isolated community in the foothills. Therefore, this is considered a less-than-significant impact. Further mitigation would be achieved by implementation of the Design Guidelines.

Views from El Dorado Hills Boulevard would be briefly prominent from U. S. Highway 50 north approximately 0.5-mile. This impact would be reduced due to the large amount of open space that would be integrated throughout the Plan Area. Further mitigation would be achieved by implementation of the Design Guidelines.

Remaining views from El Dorado Hills Boulevard would be limited due to the existence of large trees adjacent to the golf course and proposed open space designations immediately adjacent to El Dorado Hills Boulevard. Therefore, this is considered a less-than-significant impact.

The change in views from Bass Lake Road is considered less-than-significant due to the sensitivity level. Currently, Bass Lake Road is a two-lane, lightly traveled, rural, county road typically used by residents.

Scenic Highways Element

Implementation and adoption of the Specific Plan would not alter the visual appearance of Green Valley Road because the Plan Area would not be visible from the road (see Figure 14-5). Therefore, the Plan Area is consistent with the county Scenic Highways Element.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan:

Residential Policies

1. Architecture

a. Buildings shall generally be limited to two stories in height except in certain instances where topography allows higher structures without significant visual impact.

b. Buildings shall generally be designed and sited in accordance with the constraints of topography, vegetation, adjacent uses, and other natural features of a particular building site.

2. Site Development and Grading

d. Removal of oak trees and other large native trees with trunk circumference of 30 inches at 4.5 feet above grade shall be avoided where feasible.

e. In order to avoid damage to root systems, residential construction shall not occur within the canopy area of oak trees over 30 inches in circumference, and shall be subject to review as provided in the Design Guidelines.

g. In order to preserve the vegetation character of the Plan Area, the planting of native shrubs and ground cover shall be encouraged in all new landscaping.

Commercial Policies Related to Village J, The Village Green/Community Center, and Golf Course/Country Club

a. Use of natural materials such as wood and native stone is encouraged.

b. Landscape design shall incorporate native trees and shrubs.

c. Size, color, and material, of the identification signs shall be consistent with the architectural theme of the village.

Village Green/Community Center

c. The Community Center shall present a unified landscaping, lighting, and signage treatment to ensure a desirable, attractive, and safe environment. Lighting will be compatible with the screened from adjacent residential areas.

Golf Course/Country Club Policies

c. Removal of existing trees and riparian vegetation shall be kept to a minimum.

g. The location, design, boundaries and layout of the golf courses as shown on the Specific Plan shall vary in relation to open space and residential areas as necessary to accommodate topography, existing amenities, and other natural features. (NEW)

Circulation

1. Streets

c. Street trees shall be planted along all streets to provide shade, soften the appearance of the hard streetscape, and create a canopy "ceiling" to help define pedestrian scale.

d. Arterial streets contiguous to residential villages shall be separated from residential areas by a 6-foot-high fence. The design, color, and construction materials shall be consistent with the Design Guidelines appended to the Specific Plan. Such fences may be supplemented by earth berms and landscaping within the street setback.

Natural Open Space Policies

a. The boundaries of natural open space shall blend with boundaries of the villages in a manner to enhance the integration of open space and developed areas.

b. Open space shall be linked visually and physically to the extent practicable by prohibiting perimeter lot fencing adjacent to the open space. Perimeter fencing may be permitted for rural parcels as provided in the Design Guidelines and CC&Rs.

c. Increased run-off from adjacent development will require control measures to be coordinated with landscape design of adjacent development areas. Emphasis shall be placed on methods which rely on natural drainage systems and minimize change to the existing condition of creek channels within open space areas.

Mitigation Measures Recommended by the EIR Consultant

None.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to aesthetics are included in Appendix I.

Chapter 15
Energy Conservation

Setting

As detailed in Chapter 6, "Public Services" Gas and Electricity section, PGandE would provide both natural gas and electricity to the Plan Area. The purpose of this chapter is to discuss energy conservation.

Rising energy costs and a general concern for resource conservation have resulted in a legislative mandate that all new structures built in California conform to energy-efficient performance standards as embodied in Title 24 of the CAC. This law requires, through incorporation of a choice of energy conservation components into building design, that maximum energy consumption levels are not exceeded, unless it is demonstrated that the building does not use nonrenewable energy sources. Alternative component packages include various degrees and modes of insulation, glazing, shading, thermal mass, infiltration control, space heating and cooling systems, and water heating systems.

Component performance standards are generated based upon the character of the regional climate. The El Dorado Hills climate is characterized by hot, dry summers, with temperatures often above 90°F, and cool winters with average low temperatures of 30-40°F. This climate is classified as Zone 16 in a system of 16 climate zones for California. For each of these zones, Title 24 specifies maximum annual space-conditioning energy consumption in British thermal units (Btus) per square foot of floor area and maximum annual water-heating energy consumption in Btus per dwelling unit (see Appendix D).

Although Title 24 is the primary energy conservation code governing El Dorado Hills energy conservation efforts for new buildings, new buildings must also comply with strict requirements of the UBC regarding insulation, glazing, weather sealing, choice of building materials, and water- and energy-conserving plumbing fixtures.

Impacts

As detailed in Chapter 2, "Project Description," the Specific Plan contains Guiding Principles for the orderly development of El Dorado Hills. The guidelines are development controls intended to aid the county during the approval process. These

guidelines include specific energy conservation principles for residential areas, commercial areas, the Village Green/Community Center, and circulation.

Approximately 53 percent of the Plan Area is proposed for residential use, which would allow for the development of 7,346 dwelling units. Residential uses would include custom and tract housing.

Implementation and adoption of the Specific Plan would increase residential gas and electric energy consumption (see Chapter 6, "Public Services", Gas and Electricity section). Limits on the increase in gas and electricity consumption would be guaranteed by the requirements of Title 24. Documentation showing compliance with Title 24 would be submitted with development applications for building permits and would be enforced by the county.

In summary, the increased energy consumption is considered a significant impact that would be mitigated to a less-than-significant level by Title 24 and several Plan Policies that apply to residential areas, commercial areas, the Village Green/Community Center, and circulation. In addition to these mitigations, it is recommended that solar energy design features be incorporated into the subdivision designs and structural development.

Mitigation Measures

Mitigation Measures Incorporated by Project Design

The following mitigation measures are Plan Policies of the Specific Plan:

Site Development and Grading

i. Site design, street, and lot patterns shall follow solar orientation principles to the maximum extent practical and feasible in order to maximize energy conservation.

Commercial Land Use

1. General

f. Trees shall be planted and maintained throughout surfaced parking lots in excess of ten parking spaces to ensure that, within 15 years after planting, at least 40 percent of the parking area is shaded.

Mitigation Measures Recommended by the EIR Consultant

Design Subdivisions to Facilitate Solar Use. Street and lot patterns (major determinants of building orientation) should follow solar orientation principles that minimize summer solar heat buildup. In addition, all development applications should be encouraged to include special design features that would effectively reduce reliance on conventional (nonrenewable) energy sources for summer cooling and winter heating. These special design features include:

- Solar Orientation
  - Building orientation should maximize south-side wall solar orientation of dwelling units to allow minimal solar exposure during the summer months, and best use of winter sun for space heating. West-side wall exposure to afternoon summer sun should be minimized.
  - Avoid large, west-facing windows on all structures.
- Shade Control
  - Provide roof overhangs, wood trellises, and other sunshade devices to shade east and especially west building surfaces and windows from summer sun.
  - Use plantings and screening to shade west walls exposed to summer sun.
  - Provide tree cover to shade streets and parking areas and reduce summer heat radiation.
- Wind Management
  - Buffer highly exposed residential surfaces from winter winds through plantings, berms, walls, or accessory structures.
  - Provide operable windows, attic vents, and crawlspace vents that are oriented to summer winds.
- Solar Access
  - Carefully select plant materials and their locations to avoid shading south-facing walls in the winter heating season.
  - Provide larger setbacks or yard areas on the south sides of dwelling units to maximize solar access.
  - Locate private and public open space areas to the south of development sites wherever possible to assist in protecting solar access to buildings.

- Use solar collectors for water, space, and swimming pool heating.

- Consider offering incentives (development review advantages, etc.) to encourage incorporation of solar energy systems in residential projects for space conditioning and water heating.

Mitigation Measures Required by County Policy

The goals and policies of the EDH-SF Area Plan which relate to energy conservation are included in Appendix I.

Alternatives

CEQA Requirements

CEQA provides directions for preparation of "Alternatives to the Project" section. These directions include the following points:

- Describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project and evaluate the comparative merits of the alternatives.

- If there is a specific proposed project or a preferred alternative, explain why the other alternatives were rejected in favor of the proposal if they were considered in developing the proposal.

- The specific alternative of "No Project" shall also be evaluated along with the impact. If the environmentally superior alternative is the "No-Project Alternative," the EIR shall also identify an environmentally superior alternative among the other alternatives.

- The discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a less-than-significant level, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

- If an alternative would cause one or more significant effects, in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed but in less detail than the significant effects of the project as proposed.

- The range of alternatives required in an EIR is governed by "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision-making and informed public participation. An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

Identified Options

Following review of the proposed Specific Plan and the physical and community resources of the Plan Area, the following alternatives to the project were identified: No-Project, Design Alternative/Mitigated Project, Higher Density, and Mix of Land Use and Housing Types. Each of these options is discussed below.

No-Project Alternative. Review of this alternative is required by CEQA and is generally construed as either absolutely no development or as a continuation of the status quo. For purposes of this EIR, the No-Project Alternative is defined as no development. Under this alternative grazing would most probably continue in the Plan Area. However, it is important to note that both the El Dorado County General Plan and the EDH-SF Area Plan currently designate the Plan Area for urban development and clearly contemplate some type of residential construction in the area. Therefore, retention of the area in open space and grazing uses in perpetuity is not likely.

Implementation of the No-Project Alternative would require denial of the application and Specific Plan. The No-Project Alternative would result in the following impacts:

- Elimination of the current Specific Plan from consideration.
- Loss of all monies expended by the applicant to date.
- Elimination of project-related construction jobs.
- No project-related increase in population or housing stock.
- No project-related demands on public service capacities or facilities (water, wastewater, solid waste, law enforcement, fire protection, schools, parks and recreation, and electrical and gas service.)
- No increase in project-generated traffic volumes to area roadways.
- No project-supported mitigation of existing or long-term (1997, 2010) transportation problems with existing area roadways.
- No project-generated contribution to degradation of regional air quality of violation or government standards.
- No project-related increases in erosion and sedimentation or location of structures in areas of high shrink-swell potential.

- No increase in existing stormwater runoff volumes or alteration of surface water quality.

- Retention of Plan Area plant and animal communities at existing density and diversity (assuming continued onsite grazing activities).

- No disturbance of identified archeological and historic resources.

- No project-related alteration of site viewsheds.

In summary, implementation of the No-Project Alternative would effectively eliminate all impacts (beneficial and adverse) of implementation of the Specific Plan and the ultimate construction of the project. The likelihood of the Plan Area remaining permanently in grazing is low. If this proposal is denied, it is likely that another development would eventually be proposed. Whether that future proposal would generate greater or lesser environmental impacts would depend entirely on the nature of the future plan and cannot be anticipated at this time.

Design Alternative/Mitigated Project. If all the recommended mitigation measures identified in this EIR are adopted as conditions of project approval, then the Specific Plan would need to be modified, resulting in a mitigated project. To ensure that all the mitigations are implemented, it would be necessary to review each revision for consistency prior to approval. Implementation of this alternative would most probably require the establishment of a monitoring program to ensure actual onsite, construction, and long-term compliance with the recommended mitigation measures. In addition, the county should also consider hiring of a staff person, paid for by the project, to ensure adherence to the identified mitigations. Approval of the Design Alternative/Mitigated Project would result in:

- reduction to a less-than-significant level of all identified impacts except generation of increased vehicular emissions (i.e. ozone precursors);

- ongoing monitoring of tentative maps, construction, and operation and maintenance activities to ensure compliance with mitigations with consequent reduction in level of significance of impacts; and

- evaluation of public service capacities and facilities on an ongoing basis with establishment of mechanisms for monitoring and regulating project growth to reflect availability of public services.

In summary, the mitigated project option would result in a real reduction in impacts of the project but would also require

a fairly stringent and time-consuming monitoring program on behalf of the county. The applicant could "self-police" to a certain extent and could further support his own efforts to maximize site use while minimizing adverse impacts by contributing the salary of the necessary monitoring staff.

Higher Density Alternative. The Higher Density Alternative assumes development of the property to land use densities consistent with the EDH-SF Area Plan. Development to this density could result in approximately 11,400 new residential units (29,868 to 38,076 residents) as opposed to the 7,346 units under the proposed Specific Plan (19,247 to 24,536 residents). Development of the subject property to these densities would result in:

- significant increases in water consumption, sewage generation, solid waste generation, need for fire and police protection, generation of school children, demand for recreational facilities, and use of gas and electric resources. Resulting requirements for service could exceed long-term capabilities and capacities of affected districts;

- increase in traffic volumes, both project-related and cumulative, possibly to unavoidably significant adverse levels;

- generation of a significant increase in air pollutants, to unavoidablly significant, adverse levels;

- increase in project-related impacts on soils (erosion, sedimentation), and hydrology (stormwater runoff); however, available mitigation measures would be available to minimize impacts;

- significant increase in impacts on density of animal and plant resources of the site, with effects being essentially unmitigable;

- minimal change in impacts on area viewsheds, which could be minimized by sensitive site design addressing exterior building treatments, landscaping, building locations and densities, etc.; and

- minimal change in impacts on archeological and cultural resources which could be minimized by sensitive site planning.

In summary, development of the site at increased densities would generate significant, unmitigable adverse environmental effects.

Mix of Land Use and Housing Types. This alternative assumes that commercial use would be located to similar densities

but more widely diversified locations; that the regional shopping center is retained as a project use; that limited industrial uses are allowed; and that a greater proportion of the site residents are accommodated in multi-family and cluster-type dwelling units. The overall intent of this option would be to decrease vehicle use, increase open space, diversify available housing stock types, increase tax revenues, decrease some demands of public services, and create a less rural type of new development. Implementation of such a project would:

- be consistent with some of the applicant's Plan Policies and overall vision for the parcel,
- possibly minimize vehicle travel by making shopping and employment centers closer to area residents, and
- increase open space and minimize soil, hydrologic and biological impacts to a substantial extent.

In summary, the most important concept resulting from evaluation of this alternative is that increased use of clustered buildings could substantially reduce wildlife and vegetation impacts; probably would not substantially reduce water and sewage impacts; could incrementally reduce air quality and traffic effects; and would serve to further reduce archeologic/historic and visual impacts by allowing in more open space.

Environmentally Superior Project

Following review of the identified options, it appears that the Design Alternative/Mitigated Project in conjunction with an increase in clustered, high density sites, but no increase in overall number of units, is the environmentally superior project. The combination of these options would serve to substantially reduce all identified significant impacts while allowing the applicant to achieve his overall priorities and goals for use of the Plan Area. Increased use of clustered units could be designed to enhance the village concept while greatly enhancing the wildlife and open space values of the Plan Area.

Cumulative Impacts

Chapter 17
Cumulative Impacts

CEQA Requirements for Cumulative Impact Analyses

Cumulative impacts refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The state CEQA Guidelines require that EIRs include a discussion of cumulative impacts when they are significant. Section 15130 of the CEQA Guidelines requires that the discussion reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness.

The following elements are necessary to an adequate discussion of cumulative impacts:

1. Either a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency, or a summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions,

2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and

3. A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project.

Approach

The key issues identified for cumulative impact analysis are: land use; housing; population; public services including water, wastewater, law enforcement, fire protection, schools, parks, gas, and solid waste; traffic, and air quality. The cumulative analyses for traffic, air quality, and noise are contained in Chapter 7 "Transportation and Circulation," Chapter 8 "Air Quality," and Chapter 9 "Noise." The other issues are described below.

Growth Projections

The cumulative study area includes the Plan Area and surrounding lands in El Dorado Hills and Cameron Park as determined by the El Dorado County planning staff and the City of Folsom. The Folsom City Manager requested that this EIR address the impacts of the project on Folsom in the area of traffic impacts (see Appendix B).

The cumulative analysis looks at land use forecasts for a 10-year period, 1987-1997, and then again at cumulative conditions for 2010.

El Dorado County

El Dorado County planning staff have identified 59 projects as contributing to cumulative impacts in the project area (Dunn pers. comm. and Walters pers. comm.). These projects are shown in Figure 17-1 and are listed in Table 17-1.

City of Folsom

The City of Folsom is updating their General Plan. Angus McDonald and Associates (1987) prepared a market area study to address the market potential for land development in each of the city's five planning areas. Their study is one step in a multidisciplinary effort to update the General Plan in a manner that is supported by market potential.

Three development scenarios were developed based on construction of a beltway freeway from Interstate 5, south of Sacramento, to Interstate 80 in Placer County. The baseline condition assumes no construction of additional roadway capacity. Alternative 1 assumes construction of segments 3 and 4 (the south loop), while Alternative 2 assumes full construction. Alternative 1 represents, in the judgement of Angus McDonald & Associates, the most likely future scenario.

Table 17-2 presents the growth projections for Folsom which are used in the cumulative analysis. As shown, the population is projected to increase from 17,050 in 1985 to 27,050 in 1995, and 48,050 in 2010.

Cumulative Impact Analysis

Cumulative Housing Impacts

Cumulative projects plus project housing units would result in a total of 14,067 single-family dwellings and 3,302 multifamily dwellings. This increase is considered to be

FIGURE 17-1.

CUMULATIVE PROJECTS

Table 17-1. Cumulative Projects in El Dorado Hills and Cameron Park (5/1/87)

MAP NUMBER	PROJECT NUMBER	PROJECT NAME	SINGLE-FAMILY UNITS	MULTI-FAMILY UNITS	INDUSTRIAL BUSINESS PARK	COMMERCIAL	OTHER	LAND USE	TOTAL ACRES	STATUS	AREA PLAN
1		The Highlands #6	54						20.00		CP
2		Bass Lake Village	371						261.50		EDH
3		Royal Heights Townhouses		22					2.97		CP
4		Highlands Village #4	12						11.80		EDH
5		The Highlands #4	23						47.00		CP
6		Garden Oaks Townhouses		7					0.37		CP
7		Ridgeview Village Estates	40	209					56.70		EDH
8		Country View Villas		40					2.04	Finaled	CP
9		Far Lane Condos		8					0.41	Finaled	CP
10		West Lake Manor Townhouses		18					1.50	Unit 1 Finaled	CP
11		Cameron Woods	52	260					103.10	Unit #1 Finaled	CP
12	85-1000	Lakeview Villas		56					3.10		CP
13	85-1001	Creekside Estates		50					17.80	All Units Finaled	CP
14	85-1003	Crane Townhomes		11					1.27	Finaled	CP
15	85-1006	La Cresta	73						50.00		EDH
16	85-1008	Lakeside Village	295						145.00		EDH
17	85-1009	Bar-J Ranch	506						257.87		CP
18	85-1010	Estepa Condos		5					0.41		CP
19	85-1011	El Dorado Royal	37						12.40		CP
20	85-1012	Oak Tree Village	175						62.40		EDH
21	85-1013	Deer Trails Estates	30						10.70	Finaled	CP
22	85-1014	Parkview Heights	123						53.11	Pending	EDH
23	85-1015	Stonegate Village	463						202.80	Unit #1 Finaled	EDH
24	85-1016	Cimmarron Creek II		20					1.01		CP
25	85-1017	Sunrise Cameron	--						53.40	Dead	CP
26	85-1018	South Point	9						48.36		EDH
27	85-1019	Cambridge Woods		44					2.20		CP
28	85-1021	The Woods	6						2.37		CP
29	85-1023	La Ventana	27						10.00		CP
30	85-1025	Highland Village #3	83						83.00		EDH
31	85-1029	Cameron Park Condos		14					2.11	Finaled	CP
32	85-1030	Stoneridge Village	81						32.50		EDH
33	85-1034	Highland Village #5	--						242.80	Dead	EDH
34	86-1038	Francisco Village II	7						2.20	On Hold	EDH
35	85-1040	Oak Ridge Village	46						30.20	Pending	EDH
36	85-1047	Green Acres Estates		48					5.17		CP
37	85-1050	Sweetwater Preliminary Map	--						54.00	On Hold	EDH
38	85-1051	Pioneer Place	161						161.46	Pending	EDH
39	85-1052	Timberline Ridge/Oak Ridge	31						20.80	Pending	EDH
40	85-1053	La Ventana Oeste	30						10.23	Pending	CP
41		North West El Dorado Hills Specific Plan	1,572	834					915.50	Pending	EDH
42		Ridgeview Village #5-9	141						65.30	Units #5-6 Finaled	EDH
43	87-1062	Woodleigh Hills	43						18.99	Pending	CP
44	87-1061	Cameron Woods #4-8	167						66.90	Pending	CP
45		Park Village #5	54						22.83	All Units Finaled	EDH
46		El Dorado Hills Business Park			854.00		55.00	Golf course	909.00		EDH
47	87-1064	Creekside Estates Units #4-6	106						39.81	Pending	CP
48		Brooks Ravine	105						70.00		EDH

Table 17-1. Cumulative Projects in El Dorado Hills and Cameron Park (5/1/87)

MAP NUMBER	PROJECT NUMBER	PROJECT NAME	SINGLE-FAMILY UNITS	MULTI-FAMILY UNITS	INDUSTRIAL BUSINESS PARK	COMMERCIAL	OTHER	LAND USE	TOTAL ACRES	STATUS	AREA PLAN
49		Ridgeview East	87						110.00		EDH
50		Governors West	74						107.00		EDH
51		Browns Ravine	18						19.00		EDH
52		Crown Valley	68						92.00		EDH
53		Park Hills	106						95.00		EDH
54		Ridgeview Equestrian	49						125.00		EDH
55		Raley's Center Expansion							24.50		EDH
56		El Dorado Hills Blvd. Office Building							7.20		EDH
57		El Dorado Hills Blvd. Multi-Family							18.80		EDH
58		Saratoga Way Commercial							7.7		EDH
59		El Dorado Hills Investors south of U.S. Highway 50	3,054			25.80	573.30	Open space, roads	1,860.00		EDH
TOTAL			8,379	1,646	854.00	25.80	628.30		6,660.59		

CP = Cameron Park
EDH = El Dorado Hills

Table 17-2. Folsom Growth Projections

	1985	1995	2010
Population	17,050	27,050	48,050
Dwelling Units	7,229	11,469	20,373
Single-Family	NA	NA	8,281
Multifamily	NA	NA	4,863
Office Demand (sf)	NA	NA	1,027,000
Retail Demand (sf)	NA	NA	651,000
Industrial Demand (sf)	NA	NA	3,042,000

Source: Angus McDonald & Associates 1987.

NA = Not Available

potentially significant for two primary reasons: 1) the increase could result in a conflict with the SPO housing allocation plan for the county which projects housing needs from 1983-1990, and 2) the increase could result in a conflict with relevant housing policy objectives.

The housing policy contemplates a total of 13,572 housing units, of all types, to be built or rehabilitated for the unincorporated west slope area of El Dorado County by 1990. The cumulative project total would be 17,369, or 3,597 units more than the anticipated growth. Construction of these units would result in a potentially significant departure from the goals established by the SPO planning allocation for growth by the year 1990.

Cumulative Population Impacts

The cumulative plus project population would range from 45,507 to 58,012, depending on the population per household rate. Current population in the county is projected to be 106,093 (California Department of Finance, 1986a). The year 2000 population of El Dorado County is projected to be 158,500. Thus, existing plus cumulative and project population (45,507 plus 106,093 = 151,600; 58,012 plus 106,093 = 164,105) could exceed the anticipated population by as many as 5,605 people. This could result in the county reaching its projected year 2000 population upon completion of all the currently proposed projects. The effects of this population growth would be felt primarily by public service agencies.

Public Service Impacts

The possible consumption/generation rates for each public service, based on the previously identified unit/population totals is presented below. This information shows that all affected service districts would experience significant increases in demand as a result of this growth. This is important for two reasons: 1) the service districts are already at, or close to, capacity, and 2) the impacts of developing additional capacities could be significant in and of themselves.

Water. Based on a dwelling unit count of 17,369 and generation factors currently used by the District, a total of 16.7 MGD of increased demand would result from construction of the projects identified in Table 71-1. This demand, added onto existing-plus-project figures, would exceed the future planned expansion.

Wastewater. Based on a projected worst-case population of 58,012, the cumulative wastewater generation would total 9.3 MGD. This is 5.2 MGD beyond the ultimate future upgraded

capacity planned for the area, even without the proposed project.

Law Enforcement. If all the projects identified in Table 17-1 are constructed, a total of 68-87 additional offices would be required to serve the project areas. Unless an adequate funding mechanism for departmental personnel and capital improvements is developed, this could represent a significant burden on the sheriff's department.

Fire Protection. Assuming a population of 45,507-58,012, construction of the projects identified in Table 17-1 would require an additional 68-87 firefighters. Unless an adequate funding mechanism for department personnel and capital improvements is developed, this could represent a significant burden on the fire department.

Schools. Assuming that the projects listed in Table 17-1 are constructed, then a total of 7,538 elementary school students and 4,342 high school students would need to be accommodated in area schools. Because development is located in a wider geographic area than the specific plan, it is not possible to identify specific schools impacted or the actual number of students which would attend each school. Nonetheless, the generation of 11,880 students in the area could be expected to generate significant adverse effects.

Parks. A population of 58,012 would require the dedication of approximately 116 acres of neighborhood parks/playgrounds and 116 acres of community/district parks. The funding mechanisms to develop dedicated park sites would need to be developed. Provision of parklands will serve to partially offset the effects of the development identified in Table 17-1; however, the absence of specific funding sources to develop the facilities could represent the realization of only partial mitigation.

Summary

The development of all 59 projects listed in Table 17-1 would result in the creation of 17,369 dwelling units with a population of 45,507-58,012. The cumulative effects of this growth would be: 1) to exceed the 1990 housing goal by up to 3,597 units; 2) to exceed the year 2000 population goal by approximately 5,605 residents by the year 1990, and 3) result in the overtaxing of all existing public services with no identified funding mechanisms to assure adequate provision of service. These impacts, both singularly and together, represent a significant adverse effect on population, housing goals, and public service capacities.

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Chapter 18
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Report Preparation

Chapter 19
Report Preparation

This EIR has been prepared by Jones & Stokes Associates, Inc. under contract with EDHI. The consultants who prepared each section are listed below.

Jones & Stokes Associates, Inc.

Kim Smith	Project Manager
Kate Burdick	Project Coordinator
Francine Demos-Petropoulos	Land Use, Aesthetics, Energy Conservation
Roger Trott	Population, Housing, and Employment
Steve Centerwall	Public Services
Wayne Shijo	Transportation and Circulation, Air Quality, and Noise
Greg Sutter/Ken Casaday	Hydrology and Water Quality
Jim Jokerst/Jo Anne Sorenson	Botanical Resources
Susan Sanders/Jo Anne Sorenson	Wildlife Resources
Dave Leonhardt/Phil Dunn	Fisheries

Graphics and production provided by:

Linda Carter
Judy Bell
Vicki Axiaq
Janet Lambros
Jack Whelehan
Tony Rypich
Rubby Hampton
Darlene Auchard

TJKM Transportation Consultants

Arnold Johnson
Jeff Clark
Grant Johnson

Donald Ballanti, Certified Consulting Meteorologist

Brown-Buntin Associates, Inc.

Jim Buntin
Bill Thiessen

George A. Wheeldon & Associates

Peak & Associates, Inc.

Melinda Peak
Robert Gerry
Neal Neuenschwander
Mary Pyle Peters

ENVIRONMENTAL IMPACT REPORT
EL DORADO HILLS SPECIFIC PLAN
DISTRIBUTION LIST

El Dorado County

Board of Supervisors
Planning Commission
County Counsel
Environmental Health Division
Public Works Department, Bill Pearson
Building Division
Sheriff's Office
Air Pollution Control, Mike Redgrave
Recreation Commission
El Dorado Hills Advisory Committee
El Dorado Hills Fire Department, Robert Cima
El Dorado Hills Community Services District, Velma Gambles

Project Sponsor

El Dorado Hills Investors, Ltd., Tony Mansour
El Dorado Hills Investors, Ltd., Tom Kambe
El Dorado Hills Investors, Ltd., Brian Holloway
El Dorado Hills Investors, Ltd., Albert Hazbun
Holliman, Hackard & Taylor, Bill Holliman
Anthony M. Guzzardo & Associates, Greg Randall
Wade Associates, David Wade
Gene Thorne & Associates, Gene Thorne
TJKM Transportation Consultants, Jeff Clark
Howard C. Ullrich & Associates, Howard Ullrich
Bissell & Karn, Inc., Albert Gallardo

California

State Clearinghouse
Air Resources Board, Anne Geraghty
Department of Boating & Waterways, Bill Ivers
Caltrans - Planning, Mary Kelly
Caltrans District 3, Brian Smith
Department of Conservation, Dennis O'Bryant
Department of Forestry, Chris Parker
Department of Forestry, Dennis Orrick
Department of Health Services
Native American Heritage Commission
Office of Historic Preservation
Department of Parks and Recreation, James Doyle
State Lands Commission, Ted Fukushima

Department of Water Resources, Ken Fellows
Department of Fish and Game Region 2
Department of Fish and Game, Dan Hinz
Regional Water Quality Control Board

Interested Agencies and Individuals

Sierra Planning Organization
El Dorado County Transportation Commission, Mark Anderson
El Dorado County Resource Conservation District, Joanne Mello
El Dorado Irrigation District, Lew Archuletta
EPIC, Bill Center
El Dorado Union High School District, Douglas Brinkley
Buckeye Union School District, Lyle Graf
Rescue Union School District, Donna Soldano
Pacific Gas and Electric
Pacific Telephone
City of Folsom, Brad Kortick
City of Folsom, Bill Kime
Sacramento County Planning Department
Hefner, Stark & Marois, Robert Laurie
Sacramento Regional Transit, Wendy Hoyt
Intel Corporation, Jim Bayliss
Green Springs Ranch Landowners' Association, David Alves
River West Developments, Stefan Manolakas
Mr. and Mrs. Tong

Appendices

Appendix A

NOTICE OF PREPARATION OF AN EIR

NOTICE OF PREPARATION

TO: _____ FROM: El Dorado County Planning Division

_____ 360 Fair Lane
(Address) (Address)

_____ Placerville, CA 95667

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

El Dorado County will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the probable environmental effects are contained in the attached materials. The County has determined that an EIR will clearly be required for the project and an Initial Study was not prepared.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Larry Walrod, Planning Director at the address shown above. We will need the name for a contact person in your agency.

Project Title: EL DORADO HILLS SPECIFIC PLAN

Project Applicant, if any: EL DORADO HILLS INVESTORS

DATE December 24, 1986 Signature Larry D. Walrod

Larry Walrod
Title Planning Director

Telephone (916) 626-2438

Reference: California Administrative Code, Title 14, Sections 15063, 15082(a), 15103, 15375.

NOTICE OF PREPARATION

DRAFT

EL DORADO HILLS SPECIFIC PLAN

PROPOSED PROJECT

The proposed project is a Specific Plan prepared under the authority of California Government Code Section 65450 et seq. It includes County adoption of the Plan and implementing zoning, and the execution of specific development agreements. The Specific Plan, as proposed, is intended to be in conformance with the County adopted El Dorado Hills/Salmon Falls Area Plan and with the El Dorado County General Plan.

The project area encompasses approximately 4,085 acres and is located in western El Dorado County. The present land use is low intensity grazing and open space. Current ownership of lands within the specific plan boundary is largely held by El Dorado Hills Investors, Ltd. However, properties under other ownerships have also been incorporated to complete a logical specific plan boundary.

The majority of the project, approximately 3,760 acres, lies north of Highway 50 and east of El Dorado Hills Boulevard. Within this area the Plan provides for residential uses, with a specific density for each area or "village"; school sites; a community assembly area (Village Green); country club and related uses; and open space (including two golf courses). Public service facilities, including a fire station and sheriff substation, will be located at the Village Green. The overall gross density for residential development in this area is 1.7 units per acre (see Plate 1).

South of Highway 50, the project area also includes largely undeveloped lands used for low intensity grazing. The project boundaries extend south and east to White Rock Road, and east and west of Latrobe Road. Within this area, the predominant land use is commercial, comprising approximately 256 acres. Lands designated for commercial uses are proposed to be preserved for general commercial development, with potential for a regional shopping center. Residential uses, south of Highway 50 include approximately 69 acres, and are proposed to conform with the current general plan and zoning land uses and densities.

The Specific Plan also proposes several major access and circulation improvements to accommodate proposed ultimate development. These include the extension of Silva Valley Road to Green Valley Road, a major collector between El Dorado Hills Boulevard and Bass Lake Road, and a new interchange at Silva Valley Road and Highway 50.

TABLE I

SUMMARY OF SPECIFIC PLAN LAND USES

Village	Land Use	Acres	Residential Units	Average Density (Units/Acre)
A	Residential	151.4	606	4.0
B	Residential	53.1	212	4.0
C	Residential	252.2	482	1.9
D	Residential	250.1	925	3.7
E	Residential	109.3	282	2.5
F	Residential	106.8	553	5.2
G	Residential	191.7	905	4.7
H	Residential	159.3	362	2.3
I	Residential	134.1	699	5.2
J	Residential/ Commercial	162.0	365	2.2
K	Residential	235.9	458	1.9
L	Residential	24.7	56	2.2
M	Residential	148.0	37	0.25
N	Residential	126.5	506	4.0
VG	Village Green (Community Ctr.)	27.0	N/A	N/A
S-1	School	18.0	N/A	N/A
S-2	School	18.0	N/A	N/A
T	Commercial	125.8	N/A	N/A
U	Commercial	129.8	N/A	N/A
V	Commercial	5.1	N/A	N/A
-	Open Space	848.8	N/A	N/A
-	Golf Courses			
	north	167.4	N/A	N/A
	south	202.6	N/A	N/A

TOTAL ACREAGE: 3786.4 Acres

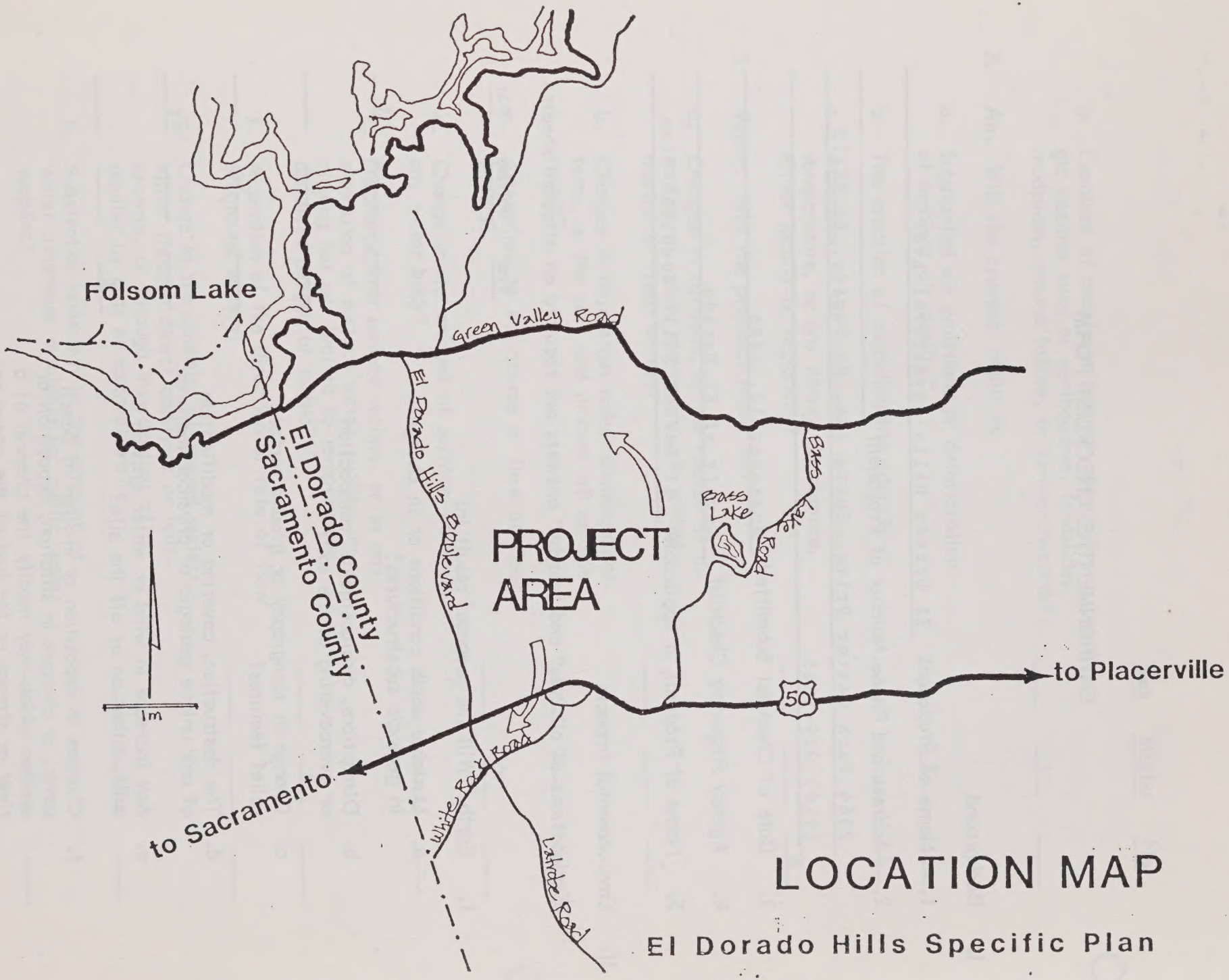
GROSS DENSITY: 1.70 Dwelling Units/Acre

TABLE I (Cont.)

SUMMARY OF SPECIFIC PLAN LAND USES

Additional Lands Within the Specific Plan Area

Village	Land Use	Acres
P	Residential	530
Q	Residential	64.13
R	Recreation/Parks	157.44
S	Residential	10.5
W	Open Space	13.28



LOCATION MAP

El Dorado Hills Specific Plan

ENVIRONMENTAL CHECKLIST FORM

I. Background

1. Name of Proponent El Dorado Hills Investors, Ltd.
2. Address and Phone Number of Proponent
   3864 Park Center Drive, Suite 204, El Dorado, CA 95815
   (916) 929-5545
3. Date of Checklist Submitted November 10, 1986
4. Agency Requiring Checklist County of El Dorado
5. Name of Proposal, if applicable El Dorado Hills Specific Plan

II. Environmental Impacts

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

	Yes	Maybe	No
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructures?			X
b. Disruptions, displacements, compaction or overcovering of the soil?		X	
c. Change in topography or ground surface relief features?		X	
d. The destruction, covering or modification of any unique geologic or physical features?			X
e. Any increase in wind or water erosion of soils, either on or off the site?	X		
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?			X

	Yes	Maybe	No
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?		X	
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?		X	
b. The creation of objectionable odors?			X
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?			X
3. Water. Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?			X
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	X		
c. Alterations to the course or flow of flood waters?		X	
d. Change in the amount of surface water in any water body?			X
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?		X	
f. Alteration of the direction or rate of flow of ground waters?			
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?		X	
h. Substantial reduction in the amount of water otherwise available for public water supplies?		X	
i. Exposure of people or property to water related hazards such as flooding or tidal waves?			X

	Yes	Maybe	No
4. Plant Life. Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?		X	
b. Reduction of the numbers of any unique, rare or endangered species of plants?		X	
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?		X	
d. Reduction in acreage of any agricultural crop?		X	
5. Animal Life. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?		X	
b. Reduction of the numbers of any unique, rare or endangered species of animals?		X	
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	X		
d. Deterioration to existing fish or wildlife habitat?		X	
6. Noise. Will the proposal result in:			
a. Increases in existing noise levels?	X		
b. Exposure of people to severe noise levels?			X
7. Light and Glare. Will the proposal produce new light or glare?	X		
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	X		
9. Natural Resources. Will the proposal result in:			
a. Increase in the rate of use of any natural resources?		X	

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	Yes	Maybe	No
b. Substantial depletion of any nonrenewable natural resource?			X
10. Risk of Upset. Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?			X
b. Possible interference with an emergency response plan or an emergency evacuation plan?			X
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	X		
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	X		
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	X		
b. Effects on existing parking facilities, or demand for new parking?		X	
c. Substantial impact upon existing transportation systems?	X		
d. Alterations to present patterns of circulation or movement of people and/or goods?	X		
e. Alterations to waterborne, rail or air traffic?			X
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X	
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	X		
b. Police protection?	X		
c. Schools?	X		

	Yes	Maybe	No
d. Parks or other recreational facilities?	X		
e. Maintenance of public facilities, including roads?	X		
f. Other governmental services?	X		
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?		X	
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?		X	
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
a. Power or natural gas?	X		
b. Communications systems?	X		
c. Water?	X		
d. Sewer or septic tanks?	X		
e. Storm water drainage?	X		
f. Solid waste and disposal?	X		
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?			X
b. Exposure of people to potential health hazards?			X
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?		X	
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	X		
20. Cultural Resources.			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?		X	

	Yes	Maybe	No
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?			X
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?			X
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?			X
21. Mandatory Findings of Significance.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X	
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)		X	
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)		X	
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X

III. Discussion of Environmental Evaluation

IV. Determination
(To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. [ ]

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED. [ ]

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. [X]

December 24, 1986
Date

Larry D. Walrod
Signature

Larry Walrod
Planning Director

ENVIRONMENTAL CHECKLIST FORM

Explanation of "Yes" and "Maybe Answers:

1. (b) (c) (e) Grading for road construction, placement of utilities and site development may result in localized changes in topography and short-term impacts including disruption and increased erosion of soils.

2. (a) The project will result in the increased concentration of motor vehicles within the project area. The resulting increase in air emissions from vehicles may be substantial. The use of additional fireplaces and wood stoves will increase stationary source air emissions.

3. (b) (c) Implementation of the Specific Plan will result in the addition of impervious surfaces including street, driveways and rooftops. This will cause an increase in the amount of runoff flowing from the site, and a decrease in the time required to reach peak flow runoff volumes.

3. (e) The water quality of runoff from the site will be altered initially during implementation of the plan (e.g. grading) resulting in increased turbidity. Following plan implementation, runoff from the site will be typical of residential areas in the County.

3. (f) As typical of urban drainage systems, runoff will be intercepted and discharges concentrated.

3. (g) Addition of impervious surfaces and roadwork may affect the rate of aquifer recharge.

3. (h) Full build-out under the Plan will result in a substantial increase in the volume of domestic water utilized in this County.

4. (a) (b) Implementation of the Plan will permanently alter the vegetative communities within the proposed development areas (villages). Vegetation within proposed open space areas, with the exception of the proposed golf courses, will not be directly affected. It is unknown whether any unique, rare or endangered plant species may be affected.

4. (c) The implementation of the Plan will result in the establishment of non-native plant species as part of residential and golf course landscaping. Replenishment of existing species may be affected.

4. (d) The project site does not contain any prime agricultural soils. Portions of the site have been, or are, used for dryland grazing of cattle. Implementation of the Plan will convert this use to residential and related uses.

Environmental Checklist Form (Cont.)

5. (a) (b) (d) The implementation of the Plan and the conversion of foothill grassland and oak-woodland communities will permanently alter wildlife populations within the project site. Reduction of these habitats may affect feeding areas of Peregrine Falcons and Southern Bald Eagles.

5. (c) The project will result in the introduction of domestic pets in numbers greater than currently exist in the area resulting in adverse impact to some wildlife species.

5. (c) (Cont.) Development under the Plan will create some barriers to the movement of animals.

6. (a) Ambient noise levels within and adjacent to the project area will increase due to increased level of human occupancy and associated activities (e.g. noise associated with vehicular access).

7. The project will create light and potentially create glare in areas where there is presently none.

8. The project will result in a substantial change in present very low density and intensity land uses. The project does not propose to change the density or intensity of County planned land uses.

11. The project will result in a substantial increase in human population within the project area.

12. The project will create additional housing.

13. (a) (b) The project will generate substantial additional vehicular traffic in and around the project site. The project may also increase the demand for on and off-street parking.

13. (c) (d) The project, including the proposed Silva Road interchange, and connections with Green Valley Road and Bass Lake Road, will have a substantial impact upon existing regional transportation systems and will alter present patterns of circulation.

13. (f) The increase in traffic may result in an increased exposure to traffic related hazards.

14. (a-f) Implementation of the project will result in an increased demand for all public services.

15. (a) (b) The project will result in an increased demand for an usage of energy.

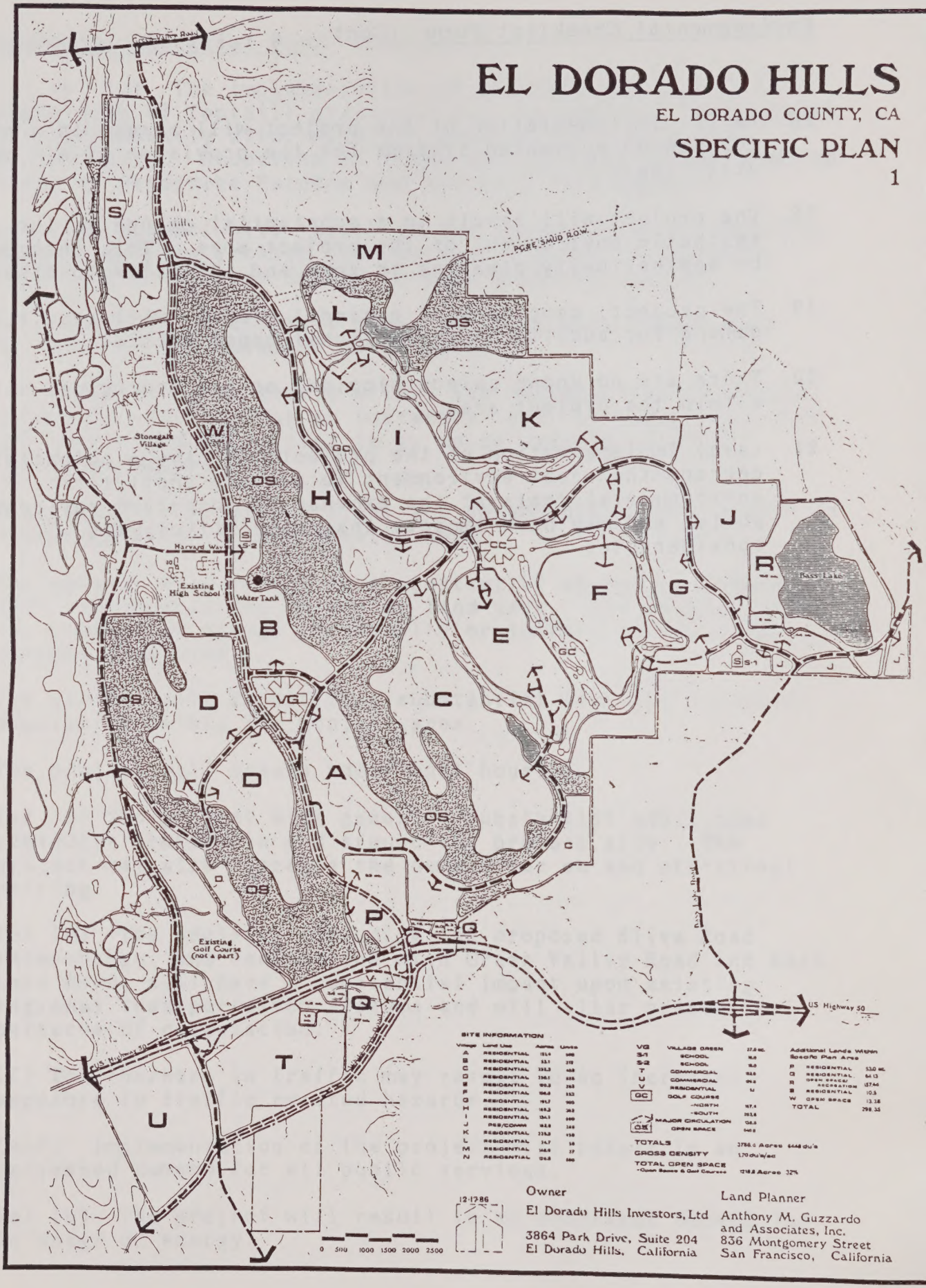
16. (a-f) Implementation of the project will result in a need for new or augmented systems for the provision of all major utilities.

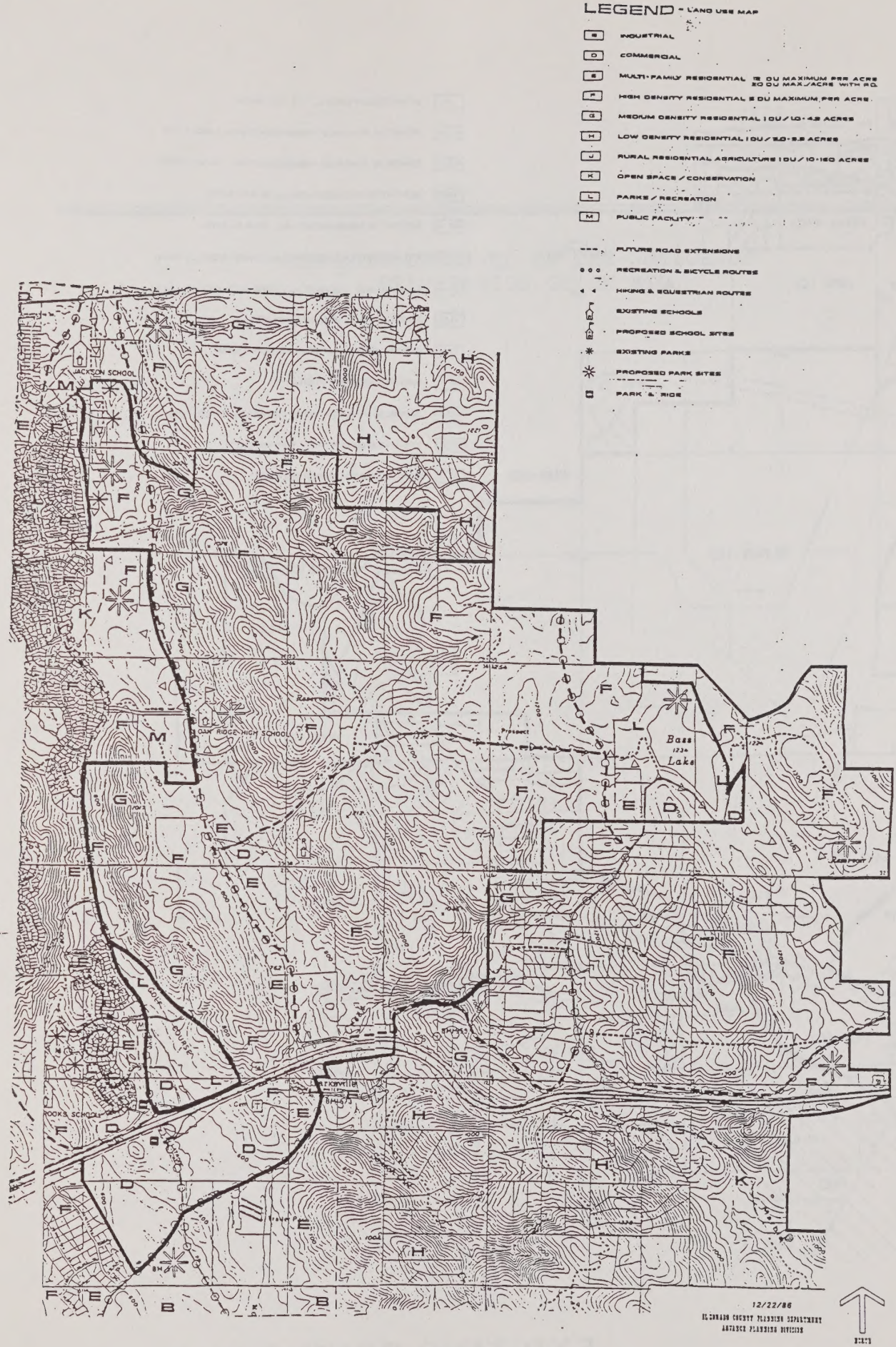
18. The project will result in a substantial change in the aesthetic environment of the project area. This change will be aesthetically pleasing to some and offensive to others.

19. The project, coupled with regional growth, will result in a demand for additional recreational opportunities.

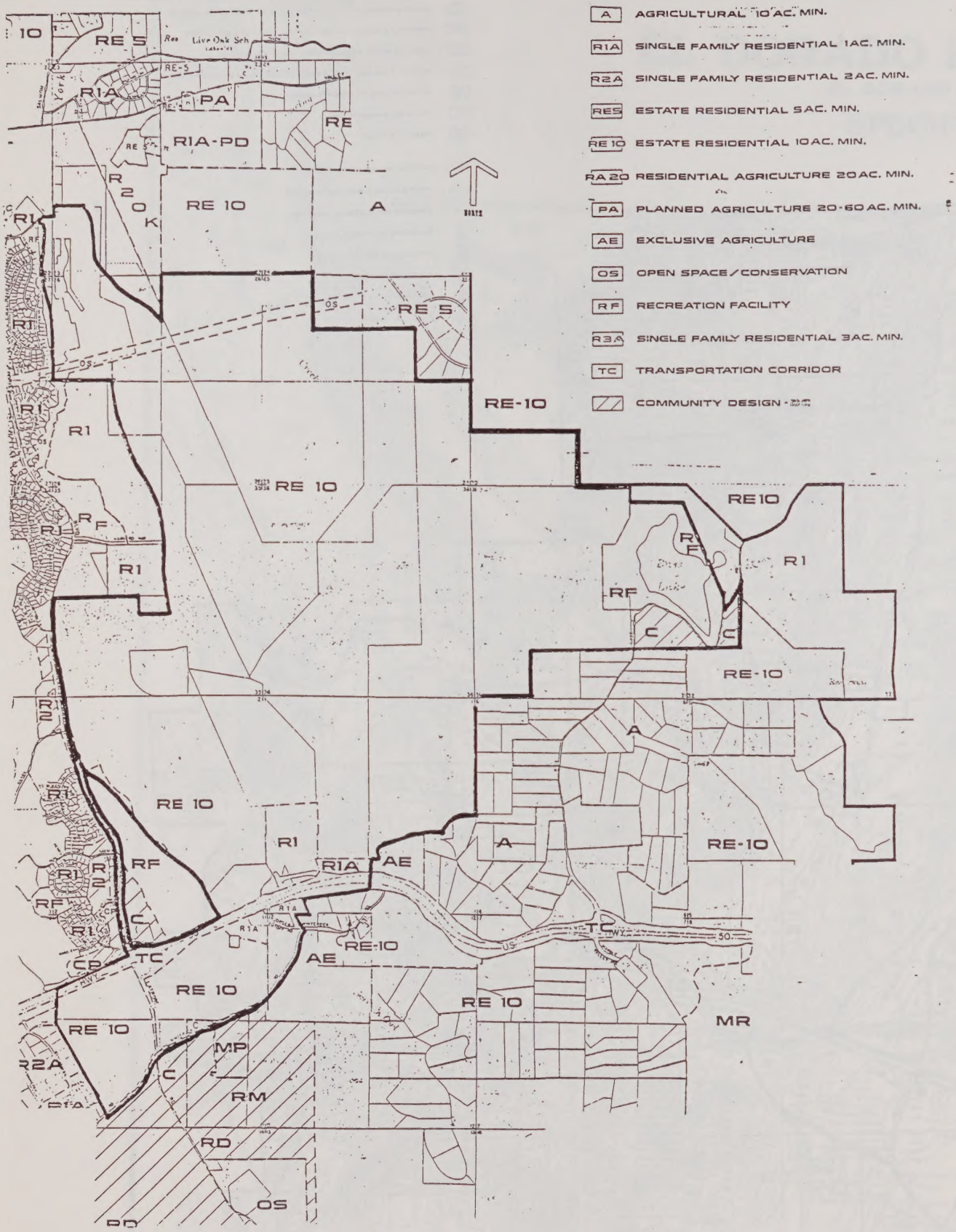
20. There are no known paleontological or archaeological sites within the project area.

21. (a-c) Implementation of the project may have a potential to degrade the areal environment to achieve short-term environmental goals at the expense of long-term environmental goals, and may have impacts that cumulatively are considerable.


EL DORADO HILLS
EL DORADO COUNTY, CA
SPECIFIC PLAN
1
PG&E SMUD R.O.W.
Stonegate Village
Harvard Way
Existing High School
Water Tank
Bass Lake
Existing Golf Course (not a part)
US Highway 50
Owner
El Dorado Hills Investors, Ltd
3864 Park Drive, Suite 204
El Dorado Hills, California
Land Planner
Anthony M. Guzzardo and Associates, Inc.
836 Montgomery Street
San Francisco, California
12-17-86
0 500 1000 1500 2000 2500



EL DORADO HILLS / SALMON FALLS AREA PLAN



EXISTING ZONING MAP

El Dorado Hills Specific Plan

3

Appendix B

COMMENTS RECEIVED ON THE NOTICE OF PREPARATION OF AN EIR

STATE OF CALIFORNIA—OFFICE OF THE GOVERNOR

GEORGE DEUKMEJIAN, Governor

OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET
SACRAMENTO, CA 95814

RECEIVED
JAN - 7 1987
COMMUNITY DEVELOPMENT DEPT.

DATE: January 2, 1987

TO: Reviewing Agencies

RE: El Dorado County Planning Division's NOP for
El Dorado Hills Specific Plan
SCH# 86122912

Attached for your comment is the El Dorado County Planning Division's Notice of Preparation of a draft Environmental Impact Report (EIR) for the El Dorado Hills Specific Plan.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Larry Walrod
El Dorado County
360 Fair Lane
Placerville, CA 95667

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Peggy Osborn at 916/445-0613.

Sincerely,

John Chanian

John B. Chanian
Chief Deputy Director

Attachments

cc: Larry Walrod

DISTRIBUTION LIST FOR SCH # 8612[illegible]912

S - Sent by Lead Agency

(S) Anne Geraghty
Air Resources Board
1131 S Street
Sacramento, CA 95814
916/322-6161

(S) Barbara Kierbow
Dept. of Boating & Waterways
1629 S Street
Sacramento, CA 95814
916/323-9488

( ) Gary L. Holloway
California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, CA 94105
415/543-8555

( ) Terry Waderos
California Energy Commission
1516 Ninth Street, Rm. 200
Sacramento, CA 95814
916/324-3579

( ) Earl Tucker
Caltrans - Division of Aeronautics
1120 N Street
Sacramento, CA 95814
916/322-9055

(S) Mary Kelly
Caltrans - Planning
1120 N Street
Sacramento, CA 95814
916/323-7222

( ) Dennis O'Bryant
Dept. of Conservation
1416 Ninth Street, Room 1323-2
Sacramento, CA 95814
916/322-5373

( ) Div. of Mines and Geology

( ) Div. of Oil and Gas

( ) Land Resources Protect. Unit

( ) Vashek Servinka
Dept. of Food and Agriculture
1220 N Street, Room 104
Sacramento, CA 95814
916/322-5207

(S) Dennis Orrick
Dept. of Forestry
1416 Ninth Street, Room 1516-2
Sacramento, CA 95814
916/322-0128

( ) James Hargrove
Dept. of General Services
1125 Tenth Street
Sacramento, CA 95814
916/324-0209

(S) Kenneth Kizer
Dept. of Health
714 P Street, Room 1253
Sacramento, CA 95814
916/445-1248

X - Sent by Clearinghouse

( ) Sgt. Ted Bowes
California Highway Patrol
Long Range Planning Section
Planning and Analysis Division
P.O. Box 398
Sacramento, CA 95804
916/445-1981

(S) Paige Talley
Native American Heritage Comm.
915 Capitol Mall, Room 288
Sacramento, CA 95814
916/322-7791

(S) Hans Kreutzberg
Office of Historic
Preservation
P.O. Box 2390
Sacramento, CA 95811
916/445-8006

(S) James M. Doyle
Dept. of Parks and Recreation
P.O. Box 2390
Sacramento, CA 95811
916/324-6421

( ) Mike Burke
Public Utilities Commission
926 J Street, Suite 1400
Sacramento, CA 95814
916/322-7316

( ) Kirk Stewart
Public Works Board
1025 P Street, 4th Floor
Sacramento, CA 95814
916/445-3332

( ) Mel Schwartz
Reclamation Board
1416 Ninth Street
Sacramento, CA 95814
916/445-2458

( ) Norris Millikan
S.F. Bay Conservation & Dev't. Comm.
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
415/557-3686

( ) Eric Maher
Calif. Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 95814
916/322-2674

(S) Ted Fukushima
State Lands Commission
1807 - 13th Street
Sacramento, CA 95814
916/322-7812

(S) Ken Fellows
Dept. of Water Resources
1416 Ninth Street
Sacramento, CA 95814
916/445-7416

( ) Reed Holderman
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
415/464-1015

86122912

Department of Transportation
District Contacts

Jerry Haynes
Department of Transportation
District 1
1656 Union Street
Eureka, CA 95501
707/445-6320

Michelle Gallagher
Department of Transportation
District 2
1657 Riverside Drive
Redding, CA 96001
916/246-3259

Brian J. Smith
Department of Transportation
District 3
703 B Street
Marysville, CA 95901
916/741-4277

Wallace Rothbart
Department of Transportation
District 4
P.O. Box 7310
San Francisco, CA 94120
415/557-3405

Jerry Laumer
Department of Transportation
District 5
50 Higuera Street
San Luis Obispo, CA 93401
805/549-3161

Nathan Smith
Department of Transportation
District 6
P.O. Box 12616
Fresno, CA 93778
209/488-4098

Wayne Ballentine
Department of Transportation
District 7
120 Spring Street
Los Angeles, CA 90012
213/620-3335

Guy Visbal
Department of Transportation
District 8
247 West Third Street
San Bernardino, CA 92403
714/383-4557

Tom Dayak
Department of Transportation
District 9
500 South Main Street
Bishop, CA 93514
714/873-2290

Larry Burgess
Department of Transportation
District 10
P.O. Box 2048
Stockton, CA 95201
209/948-7112

Jim Cheshire
Department of Transportation
District 11
2829 Guam Street
San Diego, CA 92108
714/237-6755

Fish and Game - Regional Offices

A. Naylor, Regional Manager
Department of Fish and Game
601 Locust
Redding, CA 96001
916/225-2300

Jim Messersmith, Regional Manager
Department of Fish and Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
916/355-0922

B. Hunter, Regional Manager
Department of Fish and Game
7329 Silverado Trail
Napa, CA 94558
707/944-2011

G. Nokes, Regional Manager
Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93726
209/222-3761

Fred A. Worthley Jr., Reg. Manager
Department of Fish and Game
245 West Broadway
Long Beach, CA 90802
213/590-5113

Rolf E. Hall
Marine Resources Region
245 West Broadway
Long Beach, CA 90802
213/590-5155

State Water Resources Control Board

John Juranich
State Water Resources Control Board
Division of Clean Water Grants
P.O. Box 100
Sacramento, CA 95801
916/322-3413

Ed Anton
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801
916/445-9552

Jerry Johns
State Water Resources Control Board
Delta Unit
P.O. Box 2000
Sacramento, CA 95810
916/322-0877

Al Wang
State Water Resouces Control Board
Division of Water Rights
901 P Street
Sacramento, CA 95814
916/324-5716

Regional Water Quality Control Board

Region # 5 City Sacto.

EL DORADO HILLS
FIRE DEPARTMENT

990 LASSEN LANE, EL DORADO HILLS, CALIFORNIA 95630 • TELEPHONE 933-6623

January 6, 1987

El Dorado County Planning Department
360 Fair Lane
Placerville, CA 95667

RE: El Dorado Hills Specific Plan

Attention: Larry Walrod

Dear Mr. Walrod:

The following information is provided regarding the impact of the above referenced project.

The completed project will have a significant impact upon all levels of the Department. In order to maintain the present level of public service, additional manpower, apparatus, equipment and a station will need to be provided.

A fire station in the Bass Lake area would need to be constructed with necessary apparatus and equipment in addition to twenty-four manning.

Additional staffing in other divisions of the department such as fire prevention, training and supervision would also be necessary.

Special apparatus and or equipment may be necessary to provide service to the commercial areas or to meet the needs of the impact created by residential, recreational, schools, and other related growth.

In accordance with El Dorado County Ordinance 3576, the District has adopted a Development Fee Schedule to assist in the mitigation of the impact of development.

The ability of the District to provide public service to this project may be inhibited by the restrictions placed upon the District by Proposition 4. Regardless of the revenue generated by development, this proposition limits the amount the District is allowed to spend. This potentially could have a significant impact on the level of public service provided.

RECEIVED
JAN - 8 1987
COMMUNITY DEVELOPMENT DEPT.

If you have any questions or need additional information, please feel free to contact me.

Yours very truly,

EL DORADO HILLS FIRE DEPARTMENT

Robert B. Cima

Robert B. Cima, Chief

RBC/cb

REGIONAL TRANSIT
P.O. BOX 2110 • 1400 29TH STREET • SACRAMENTO, CA 95810-2110 • (916) 321-2800

January 12, 1987

Mr. Larry Walrod, Planning Director
El Dorado County Planning Division
360 Fair Lane
Placerville, California 95667

NAME OF DEVELOPMENT: El Dorado Hills Specific Plan

TYPE OF DOCUMENT: Notice of Preparation of a Draft Environmental Impact Report

DATE RECEIVED AT RT: December 26, 1986

STAFF COMMENTS: Regional Transit recognizes that El Dorado County is not within the boundaries of the Regional Transit District. This development, however, and others to the west of it within Sacramento County hold the potential to impact the regional transportation system, as well as create new demands in areas not currently served by public transit. RT offers the following comments in the spirit that they will assist your agency in developing an El Dorado Hills specific plan which will provide the levels of transportation service and quality of lifestyle, that will most meet the needs of its residents.

RT suggests that the EIR focus on transportation with an emphasis on providing commute alternatives to single-occupant auto travel. The EIR should address transit system alternatives which would best serve the needs of the Specific Plan Area. Possible types of transit systems could include peak hour express bus service along the Highway 50 Corridor and all-day local fixed-route or dial-a-ride service within the Specific Plan Area. The EIR should also address strategies that will encourage the use of transit within the Specific Plan Area. These strategies could include, but are not limited to the following:

- Provide the necessary infrastructure for transit, such as park-and-ride lots, transit centers, bus shelters, and bus turnouts.
- Require incentives to encourage transit use, such as an employee fare subsidy program.
- Develop funding mechanisms to finance the cost of new or expanded transit service for the community.

- Eliminate potential barriers to transit use by developing street patterns that provide for direct pedestrian access to bus stops located along major thoroughfares, and orient building entrances to bus stops.

- Design street patterns that are not circuitous, to reduce bus travel times (and associated operating costs) and to avoid the need for duplication of service along route segments within the community.

- Place higher residential densities along potential transit routes to facilitate their use.

In addition, the EIR should provide a thorough analysis of projected traffic patterns for the proposed community, with due consideration given to the cumulative impacts produced by communities that are currently being developed or are proposed for development to the west of the El Dorado Hills Specific Plan Area.

CONTACT PERSON(S): David Melko, Associate Planner - 732-2262
Ken DeCrescenzo, Assistant Planner - 732-2254

Sincerely,

Wendy J. Hoyt by PR

Wendy J. Hoyt
Assistant General Manager
Planning & Marketing

c: Mark Anderson, Director-El Dorado County Transp. Commission

EL DORADO UNION HIGH SCHOOL DISTRICT

ADMINISTRATION

HERBERT J. HEMINGTON, Ed.D.
Superintendent
NORMAN R. MENZIE
Ass't Superintendent-Instruction
R. CHRIS WESTPHAL, Ed.D.
Director-Personnel & Programs
DOUGLAS R. BRINKLEY
Director-Administrative Services

January 13, 1987

CERTIFIED MAIL

Larry Walrod, Planning Director
El Dorado Community Development Department
360 Fair Lane
Placerville, CA 95667

RE: El Dorado Hills Specific Plan

Dear Mr. Walrod:

In reference to the El Dorado Hills Specific Plan presented by the El Dorado Hills Investors, the proposed project will, generate 6509 residences for a total output of 1627 high school students. Hence, the El Dorado Union High School District finds that due to the impaction created by the proposed plan, the placement of a school site large enough to accommodate a comprehensive school is necessary to provide adequate educational facilities.

The two proposed school sites of 18 acres are insufficient in size to accommodate a comprehensive high school.

Sincerely,

Douglas R. Brinkley
Director of Administrative Services

cc: H. Hemington

DB:jo
wp:mitig2
EDHills Plan

4675 MISSOURI FLAT ROAD · POST OFFICE BOX 1450 · DIAMOND SPRINGS · CALIFORNIA 95619-1450 · PHONE 916/622-5081

El Dorado County Resource Conservation District

1024 SIMON DR. PLACERVILLE, CA 95667 TELEPHONE 622-1410

January 15, 1987

REF. NO. El Dorado Hills Specific Plan

Larry Walrod, Planning Director
El Dorado Co. Planning Division
360 Fair Lane
Placerville, CA 95667

Sir:

In response to your request for our review of the above-referenced project, our staff has reviewed the project and we have the following comment:

The El Dorado County RCD has determined the need for the proposed El Dorado Hills Specific Plan to include adequate environmental analysis on such items as parent material, soil, winter drainage and runoff, earth moving and erosion control.

Sincerely,

EARL MC GUIRE, President
Board of Directors

By Joanne Mello
Joanne Mello
Coordinator/Assistant

cc: James C. Kimmel, DC, SCS, Placerville

DEPARTMENT OF PUBLIC WORKS

INTEROFFICE COMMUNICATION

Date: January 15, 1987

To: Larry Walrod, Director, Planning Division, Community Development Dept.

From: Bill Pearson, Associate Civil Engineer BP

Subject: Notice of Preparation of a Draft Environmental Impact Report - El Dorado Hills Specific Plan

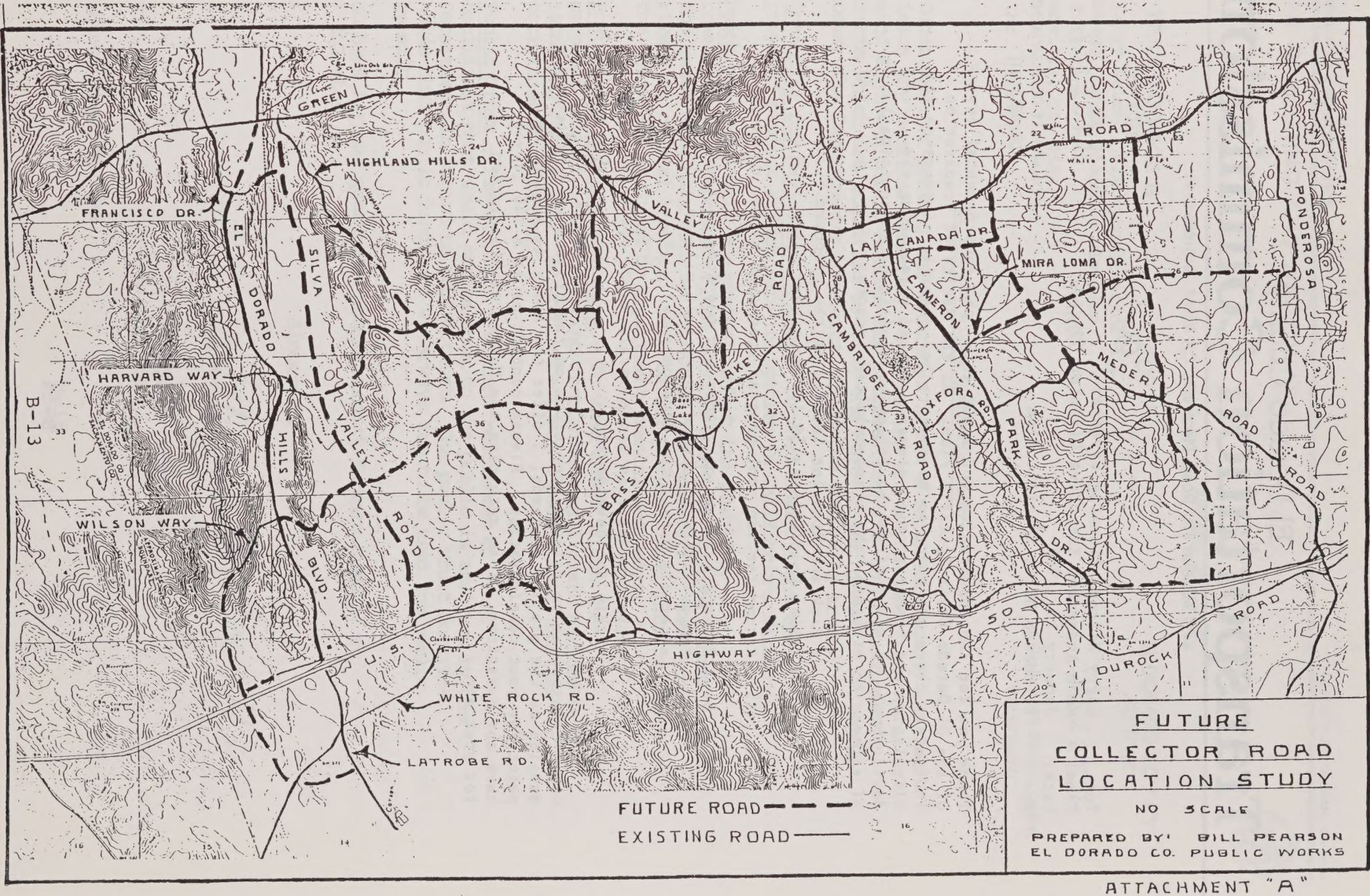
This letter is in response to your Notice of Preparation on the above referenced subject.

This project will require a very extensive analysis of transportation and traffic circulation. A traffic study for this specific plan will be needed to augment the El Dorado Hills - Salmon Falls Area Traffic Circulation Study completed in 1984 by Omni-Means, Ltd. traffic consultants. This traffic analysis should identify all the specific improvements needed and verify conformance or non-conformance with the 1984 study. If any improvements are needed, not identified in the 1984 study, their cost should be borne by the developer of this project. If the traffic mitigations are greatly out of conformance with the 1984 study, then that study should be replaced with a new study for the El Dorado Hills - Salmon Falls Area Plan with a new fee structure established.

This Department has already identified a collector road network needed in the area of this project based upon planned land uses. Please see Attachment "A". It is recommended that any development in this area should conform in principle to this network plan.

BP:jlh

Attachment



ATTACHMENT "A"

El Dorado County
Transportation Commission
4429 Missouri Flat Road, Placerville, CA 95667 916/626-2146

To: Larry Walrod, Planning Director
From: Mark Anderson, Executive Director
Date: January 15, 1987
Re: El Dorado Hills Specific Plan

Thank you for the opportunity for input into the environmental review of the El Dorado Hills Specific Plan. As the Notice of Preparation indicates, there are going to be some rather dramatic impacts on the circulation and transportation elements in and surrounding the development. I would offer the following conditions in anticipation of efforts to mitigate the transportation impacts:

1. A Park and Ride lot located at the proposed Silva Valley Road/Highway 50 interchange.

2. A commuter van pool program sponsored by the developer.

3. Transit bus turn-out lanes and bus stop benches and/or shelters located every half mile on major arterials within the development.

4. Bicycle/pedestrian lanes on all major arterials within the development.

Other transportation related conditions on the project will undoubtedly develop as the project proceeds; I offer the above as a starting point for your consideration. Please contact me at X 146 if you have any questions. I am returning the Notice of Preparation for your use.

STATE OF CALIFORNIA—THE RESOURCES AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF BOATING AND WATERWAYS
1629 S STREET
SACRAMENTO, CA 95814-7291
(916) 445-6281

January 20, 1987

EL DORADO COUNTY
RECEIVED

JAN 22 1987

COMMUNITY DEVELOPMENT
DEPARTMENT

Mr. Larry Walrod, Planning Director
El Dorado County Planning Division
360 Fair Lane
Placerville, CA 95667

Dear Mr. Walrod:

El Dorado Hills Specific Plan

The Department of Boating and Waterways is not a regulatory agency and does not issue any permits. However, we do review and may comment upon U. S. Corps of Engineer public notices for proposed projects and environmental documents which are submitted to us by the State Clearinghouse. For review purposes, the Department's interests lie in the following areas:

1. Potential for Navigation Hazards - To what extent might the proposed project affect safe navigation in California's waterways?

2. Beach erosion - Will the project affect the stability of coastal or bay beaches? Flood control projects, including dams and reservoirs, can have an impact on the transport of sand from rivers to coastal beaches. All coastal projects that intrude into the ocean are analyzed by Department coastal engineers.

3. Boating and Boating Facilities - To what extent might the proposed project affect existing or planned small craft harbors or launching facilities? To what extent might recreational boating activities be affected?

4. Public Trust - Placement of permanent residences or other facilities that would not be open to the public is analyzed by the Department in regard to public trust. The public trust doctrine holds that public lands and waterways are to be used for public benefit.

If you have further questions, please contact Barbara Kierbow at (916) 322-4165.

Sincerely,

William H. Ivers/bk

WILLIAM H. IVERS
Director

cc: State Clearinghouse

STATE OF CALIFORNIA—TRANSPORTATION AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
P.O. BOX 911, MARYSVILLE 95901
(916) 741-4498

EL DORADO COUNTY
RECEIVED
JAN 26 1987
COMMUNITY DEVELOPMENT
DEPARTMENT

January 23, 1987

03-ED-50 P.M. 0.8
El Dorado Hills
Specific Plan

Mr. Larry Walrod
El Dorado County
Planning Department
360 Fair Lane
Placerville, CA 95667

Dear Mr. Walrod:

Thank you for the opportunity to review the notice of preparation of draft EIR for the El Dorado Hills Specific Plan. The project area includes 4,085 acres north of Highway 50 and east of El Dorado Hills Boulevard. Several major access and circulation improvements are planned.

The County should be aware that the proposed interchange at Highway 50 and Silva Valley Road will require approval of the California Transportation Commission and Federal Highway Administration (FHWA). Attached is a recent policy memorandum from the FHWA regarding revision, modification and addition of new interchanges on California freeways. The memo also identifies minimum spacing requirements.

Since Highway 50 is the major access route to employment centers in Sacramento County, the draft EIR should identify the impacts to Highway 50 as a result of additional vehicle miles traveled to work locations. New or improved access onto any State highway for which federal funds were initially invested requires environmental clearance pursuant to NEPA, in addition to the CEQA process. All operational impacts to the freeway mainline should be assessed and, if possible, site-specific impacts due to interchange construction should also be identified as early as possible. This would help expedite the NEPA process. The enclosed blue brochure outlines procedures for planning major improvements to State transportation facilities.

We look forward to reviewing the draft EIR. If you have any questions, please contact Mrs. Jeannie Baker, telephone (916) 741-4498.

Sincerely,

Brian J. Smith
Chief, Environmental Branch

Enclosure

FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION OFFICE
PROCEDURE MEMORANDUM

SUBJECT:	
Interchanges - New or Revised	D6102
	October 30, 1986

1. PURPOSE

The purpose of this Division Office Procedure Memorandum is to describe the office policy regarding the revision, modification and addition of new interchanges to the freeway system in California.

2. GENERAL

The California Freeway System has been constructed at great cost with control of access to insure operating safety, permanence and utility and in some cases with flexibility to provide for possible future expansion. It is expected that access changes along these freeways will be required; however, it is essential that proposed revisions be fully evaluated and made only when the current and future functioning and safety of the freeway is not compromised.

3. RESOURCES

AASHTO "A Policy on Geometric Design of Highways and Streets"

AASHTO "A Policy on Design Standards--Interstate System"

Code of Federal Regulations, Title 23

4. BACKGROUND

There is an ever-increasing number of proposals for our concurrence to modify or add new interchanges to the freeway system. The pressure for development is so great that there are many projects which will be funded by private developers with no Federal funds involved. At the same time California's freeway system is aging (and operating at capacity at many locations), its ability to accommodate increased traffic demands caused by new land development is diminishing. It is critical, therefore, to insure that all operational impacts to the freeway are fully assessed prior to our action on new or significantly modified interchanges.

5. POLICY

The primary purpose of an urban freeway is to accommodate intra-regional and the longer trips. Short trips, therefore, should be made on the local street network. To mitigate transportation impacts of new development, more

DISTRIBUTION: All Sections

OPI: HPO-CA

— Last Page —

consideration must be given to improvement of the local network and/or heavier reliance on other transportation modes.

Corridor reviews shall be performed to assess the impacts of the proposed improvement on the system along with other planned or proposed improvements. A "Level of Service" analysis should be made for current and design year traffic. This would compare the LOS with and without the proposed revision. The corridor review should also include an analysis of accidents with and without the proposed projects, and consideration of alternate local network routes. All approved and proposed future freeway revisions should be included in the analysis to give a clearer picture of cumulative impacts on the system. Where a reduction in the freeway LOS will be caused by the proposed project, alternatives to the project should be developed and implemented. All feasible and prudent measures (auxiliary lanes, ramp meters, etc.) shall be incorporated into the final design to reduce the impact of the project on the freeway operation.

Spacing of interchanges has a pronounced effect on the operation of freeways. It is our policy to locate urban interchanges at least one mile apart, and to locate suburban and rural interchanges at least two miles apart. In rare and unusual circumstances where it is not possible to obtain the minimum spacing the use of grade separated ramps or collector-distributor roads may be considered. The design of interchanges shall conform to AASHTO standards where uniformity in design is provided and all directional moves accommodated.

Bruce Cannon

Bruce E. Cannon
Division Administrator

A Proposal to Improve or Modify a State Facility Initiates the Process

Formal Request

CALTRANS WILL:

- *Perform initial review, i.e. feasibility, schedule, costs, etc.*
- *Review for possible state funding.*
- *Outline required project development steps.*

Whether State Funding is Used or "Others" Fund Project,

CALTRANS WILL:

- *Determine lead agency for the environmental clearance.*

CALTRANS REQUIRES:

- *Project must follow Caltrans' Project Development process.*
- *Project will require agency resolution and funding commitment as appropriate.*

Typical Approval Items Required in the Project Development Process

- Resolution by local agency requesting the state highway revision.
- A comprehensive traffic study and an approved geometric plan.
- A Caltrans approved Project Study Report (PSR)
- Executed Memorandum of Understanding between Caltrans and Sponsoring Agency
- Executed Cooperative Agreement between Caltrans and sponsoring agency (provides for reimbursement to Caltrans for review and coordination cost)
- Must be included in the State's 5-year Transportation Improvement Program (STIP). The project is included in the STIP as a result of an approved PSR
- Must be included in the Regional Transportation Improvement Program (RTIP)
- May require local agency approval, e.g. Revised Freeway Agreement, Signal Project
- Appropriate Federal Approvals
- Appropriate Environmental Clearance and a Caltrans approved Project Report
- Utility clearance/relocation
- Adequate Right of Way Dedication/Clearance
- Executed Cooperative Agreement between Caltrans and local agency (outlines responsibility for construction)
- In some cases Caltrans will advertise the project and perform contract administration (at other's expense)

Examples of Project

- *New Freeway*
- *New Interchange*
- *Modification of Existing Ramps*
- *Adding Ramps*
- *Widen an Existing Bridge*
- *Soundwall Project*
- *Landscaping Project*
- *Major Signal Project*
- *Conventional Highway Widening*
- *Major Intersection Revisions*

Caltrans
District 3
P.O. Box 911
Marysville, Ca.
916-741-4289

Caltrans and Your Project

50
US Route

5
Interstate

99
State Route

A Guide to Planning Major Improvements to a State Facility

AN INTRODUCTION. . .

The Project

The basic premise that should be kept in mind is that any project on a state highway is considered a Caltrans project even if the project is partially or fully funded and developed by others. This is necessary because Caltrans is the owner/operator and is responsible for maintenance and tort liability after construction.

Conditions

All projects must meet certain conditions. The project must be developed in accordance with the project development process as set forth in the various Caltrans manuals and directives to ensure that the facilities are well designed, safe and properly constructed. The Caltrans development process is set up to meet federal requirements.

Agencies

Caltrans has formal dealings only with public agencies, such as Cities or Counties. This means landowners-developers will have to obtain support from a governing agency.

Formal Request

The key that begins the Caltrans process is a formal request from the governing agency. With this request Caltrans will outline the basic framework that the project will need to follow. Local regional planning agencies or local transportation commissions must also recommend the project.

Save Time & Money

By contacting Caltrans early in the planning process, you can possibly save time and money. We at Caltrans can help by advising you on your concept, coordinating your time table with ours, and making you aware of state and federal requirements. We can also supply you with further details of the process. Only Caltrans deals directly with the Federal Highway Administration.

Overall Project Development Process for Projects on State Facility Funding by "Others"

STEP		DESCRIPTION	PROCESSING TIME
1	Initial Request or Inquiry	Local agency proposes work on state facility. The request should outline the problem, proposed solution and available resources.	
2	Project Study Report (PSR)	*This report reviews a range of alternatives including construction and right of way costs. Potential environmental, social and economic issues are covered as well as potential funding sources. A comprehensive traffic study is necessary to determine geometric plan. This geometric plan is to be approved by Caltrans prior to submitting the PSR.	2-6 months
3	Cooperative Agreement and Memorandum of Understanding	A formal agreement between Caltrans and sponsoring agency outlining all responsibilities for complete implementation of project.	2-4 months
4	Environmental Clearance and Project Report	*Process environmental documents and hold public hearings as required by Federal and State legislation. Prepare a Project Report consistent with Caltrans procedures for technical documentation of specific project proposal.	6-30 months
5	Final Design and Right of Way Clearance	*Prepare detailed roadway and structure plans, specifications and estimates. Complete necessary right of way and utility clearances.	4-24 months
6	Project Advertised For Construction	Caltrans processes final plans, specifications, and estimates for construction advertisement. Funding and right of way certification is finalized. In some cases this step may be accomplished by the local agency.	4-6 months
7	Project Construction	Contract administration will be determined by Cooperative Agreement.	6-24 months
	Total Minimum		24-94 months

**Normally accomplished by a consultant hired by either local agency or developer.*

El Dorado County Resource Conservation District

1024 SIMON DR. PLACERVILLE, CA 95667 TELEPHONE 622-1410

January 28, 1987

REF. NO. El Dorado Hills Specific Plan
Notice of Prep. Draft EIR

EL DORADO COUNTY
RECEIVED

JAN 29 1987

COMMUNITY DEVELOPMENT
DEPARTMENT

Larry Walrod
El Dorado County Planning Division
360 Fair Lane
Placerville, CA 95667

The Resource Conservation District requests that the following comment be in addition to our letter of January 15, 1987 regarding the above-referenced project:

"El Dorado County RCD board has had concerns in the past of problems associated with change of flows in the water course associated with the main sewage treatment plant south of Highway 50."

Sincerely,

EARL MC GUIRE, President
Board of Directors

By Joanne Mello
Joanne Mello
Coordinator/Assistant

cc: James C. Kimmel, DC, SCS, Placerville

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF CONSERVATION
DIVISION OF ADMINISTRATION
DIVISION OF MINES AND GEOLOGY
DIVISION OF OIL AND GAS

1416 Ninth Street
SACRAMENTO, CA 95814
(916) 322-5873

JAN 29 1987

Mr. Larry Walrod
El Dorado County Planning Division
360 Fair Lane
Placerville, CA 95667

Dear Mr. Walrod:

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for El Dorado Hills Specific Plan. SCH# 86060909

The Department of Conservation is responsible for monitoring farmland conversion on a statewide basis. The Department also administers the California Land Conservation (Williamson) Act. We have reviewed the County of El Dorado's NOP for the project referenced above and have noted that the proposal may involve the conversion of valuable farmland. The Department, therefore, offers the following comments.

The proposal would involve developing approximately 4,085 acres of land for residential and commercial uses. Approximately 861 acres would remain in open space and recreational use.

The DEIR should provide information on the number of acres of agricultural land to be developed, the potential agricultural value of the site, the impacts of the conversion of that land and possible mitigation actions. We recommend the DEIR contain the following information to ensure the adequate assessment of the project's impacts in these areas.

- The agricultural character of the area covered by the project and of nearby or surrounding lands which may be affected by the conversion.
  - Identify agricultural preserves and number of acres of land, type of land, (i.e. prime/non-prime) and location.

- Agricultural potential, based on the U. S. Department of Agriculture's Land Capability Classifications and on Important Farmland Series map designations (a cursory review showed nearly all land in the project area to be currently mapped as grazing land or land that does not meet the criteria for any other category)
- The impact upon current and future agricultural operations.

o Farmland Conversion Impacts

- The type and amount of farmland conversion, if any, that would result from implementation of the plan.
- The proportion of the County's total farmland that this conversion would represent.
- The growth inducing impact of the plan on other grazing land in El Dorado County.
- The cumulative impact of the plan on other grazing land in and around the project area.

o Mitigation measures and alternatives that would lessen the farmland conversion impact of this project. Some of the possibilities are:

- Protection of other, existing grazing land through the use of Williamson Act contracts.
- Establishment of greenbelt areas.
- Use of setbacks, buffers, and right-to-farm ordinances to offset nuisance impacts of urban uses on neighboring agricultural operations, and vice-versa.
- A no-project alternative.

The Department appreciates the opportunity to comment on the DEIR. We hope that the farmland conversion impact and the Williamson Act contract issues are given adequate consideration in the DEIR. If I can be of further assistance, please feel free to call me at (916) 322-5873.

Sincerely,

Dennis J. O'Bryant

Dennis J. O'Bryant
Environmental Program Coordinator

cc: Stephen Oliva, Manager
Land Conservation Unit

Ken

BUCKEYE UNION *School District*

POST OFFICE BOX 547 • SHINGLE SPRINGS, CALIFORNIA 95682 • (916) 677-2261 • 985-2183

LYLE GRAF
SUPERINTENDENT

Planning Division
RECEIVED
FEB 02 1987

February 2, 1987

Mr. Larry Walrod
Planning Director
El Dorado County Planning Dept.
360 Fair Lane
Placerville, CA 95667

Dear Mr. Walrod:

On behalf of the Buckeye Union School District Board of Trustees, I want to call your attention to the following information regarding the potential impact from the impending El Dorado Hills Specific Plan Development upon our schools.

Buckeye Union School District currently has 1843 students from grades K-8 served on three school sites. This exceeds the 540 student limit per site master plan requirements for the district. The school district is impacted and foresees no real prospect to remedy this overcrowding situation in light of the rate of in-migration to the school district and new development spawing future enrollment.

The Buckeye Union School District views the magnitude of the project, with its potential for producing school age children, as posing a clear challenge to the district's ability to house the number of children in adequate facilities. The two 18 acre sites set aside on the project maps will not meet all the future student housing needs generated by this project.

Buckeye Union School District has a .468 student yield factor derived from the 1985/86 demographic study. Based on this statistic, The Buckeye Union School District can expect, over the next ten year build-out, 3000 children from the proposed 6400 units in the project. Given our master planning requirements, this would warrant the construction of six new schools to accommodate the addition of these children from the El Dorado Hills Specific Plan Development.

We recommend the incorporation of our concerns in the proposed environmental impact report. I have included a copy of the State Department of Education's The School Site Analysis and Development Needs Profile that will allow your department to set aside the necessary school space for these children. I would suggest the incorporation of these standards as part of the County's general plan so future development can recognize schools as a vital element of our community in El Dorado County.

Should you have further inquiries about our concerns, please contact me.

Cordially,

Lyle Graf
Superintendent

LG:ss

RESCUE UNION SCHOOL DISTRICT

"Home of Scholars and Champions"

RESCUE DISTRICT OFFICE
Donna Soldano, District Superintendent
2390 Bass Lake Road
Rescue, CA 95672
(916) 677-4461 • 933-0129

Planning Division
RECEIVED
FEB 02 1987

February 2, 1987

Mr. Larry Walrod, Planning Director
El Dorado County Planning Department
360 Fair Lane
Placerville, CA 95667

Dear Mr. Walrod:

On behalf of the Rescue Union School District Board of Trustees, I want to call your attention to the following information regarding the potential impact from the impending El Dorado Hills Specific Plan development upon our schools.

Rescue Union School District currently has 1,460 students from grades K through 8 served on 4 school sites. School loading at our sites have exceeded the limits of their master planning. The school district is impacted and foresees no real prospect to remedy this overcrowing situation in light of the rate of inmigration to the school district and new development spawning future enrollments.

The Rescue Union School District views the severity and magnitude of the project, with its potential for producing school age children, as posing a clear challenge to the district's ability to house the number of children in adequate facilities to conduct their education. The two eighteen acre sites set aside on the project maps are not consistent with our future circumstances.

Rescue Union School District has a .388 student yield factor derived from the 1985/86 demographic study. Based on this statistic, the Rescue Union School District can expect, over tht next ten-year build-out, 2,500 children knocking at our school doors from the proposed 6,400 units in the project. Given our master planning requirements, this would warrant the construction of 5 new schools to accommodate the addition of these children from the El Dorado Hills Specific Plan development.

The lead time to develop schools requires mitigation and provision to our school district. We recommend the incorporation of our concerns in the proposed environmental impact report.

GREEN VALLEY SCHOOL
Gary Brockett, Principal
2390 Bass Lake Road
Rescue, CA 95672
(916) 677-3686 • 933-3543

JACKSON SCHOOL
Dale Ingvardsen, Principal
1490 Francisco Drive
El Dorado Hills, CA 95630
(916) 677-9250 • 933-1828

RESCUE SCHOOL
William Plumb, Principal
3880 Green Valley Road
Rescue, CA 95672
(916) 677-2720 • 933-1885

MARINA VILLAGE INTERMEDIATE SCHO
Anthony DeVille, Principal
1901 Francisco Drive
Folsom, CA 95630
(916) 677-0234 • 933-3993

I have included a copy of the State Department of Education's School Site Analysis and Development needs profile that will allow your department to set aside the necessary school space for these children. I would suggest strongly the incorporation of these standards as part of the County's general plan so future development can recognize schools as a vital element of our community and El Dorado County.

Should you have further inquiries about our concerns, please contact me.

Cordially,

Donna Soldano

Donna Soldano
District Superintendent

DS:np
Enclosure

Feb. 6, 1987

EL DORADO COUNTY
RECEIVED

FEB 13 1987

COMMUNITY DEVELOPMENT
DEPARTMENT

Ms. Patti Dunn
El Dorado County Planning Dept.
360 Fair Lane
Placerville, CA 95667

Dear Ms. Dunn:

This letter is written pursuant to our recent telephone conversation in which I expressed some serious concerns regarding the proposed development project known as the El Dorado Hills Specific Plan.

I am a member of the Board of Directors of the Green Springs Ranch Landowners' Association (GSRLOA or association).

GSRLOA is comprised of the owners of approximately 100 five, six, and seven-acre parcels known as the Green Springs Ranch Rural Community (GSR) which is located west of Bass Lake and south of Green Valley Road. Our association has been in existence for more than ten years. GSR is a quiet, rural subdivision which would be seriously jeopardized by the Project. We think the proposed Project constitutes an unacceptable invasion of our quiet community in that if approved, it would locate high density housing and commercial establishments right up to the boundaries of our subdivision without any transitional or "buffer" zone. We think this would be an inappropriate and unacceptable "mix".

When our subdivision was approved by El Dorado County many years ago, the county, in effect, was approving a particular setting, namely a relatively sprawling subdivision free from concentrated housing and commercial establishments. The proposed project would destroy that setting. We believe the county has made a commitment to us to preserve our original setting.

In addition, we have numerous other concerns and objections. In the interest of time, we have listed below our major concerns regarding the proposed project:

(1) Need for adequate transitional or buffer zones.

(2) Drainage problems and the effect on our wells and septic tank systems.

(3) Location of commercial establishments so far from Highway 50.

(4) Connection of roads in our subdivision with roads in proposed project.

(5) Adequate schools and fire stations.

(6) Increased traffic on Green Valley Road and Highway 50.

(7) Increased air and noise pollution.

We request that you address these concerns in making your evaluation and recommendations regarding the proposed project and we look forward to discussing this matter further with you.

Very truly yours,

David D. Alves
Member, Board of Directors
Green Springs Ranch
Landowners' Association

DDA:pl

CITY OF FOLSOM
50 Natoma Street
Folsom, California 95630
(916) 355-7200

February 11, 1987

Larry Walrod
Planning Director
El Dorado County Planning Division
360 Fair Lane
Placerville, CA 95667

Re: Comments on NOP - El Dorado Hills Specific Plan

Dear Mr. Walrod:

Thank you for the opportunity to review the above NOP. As stated in the enclosed comments on the Draft EIR for the Northwest El Dorado Hills Specific Plan, we believe that the subject EIR must adequately analyze the impacts of the proposed project along Green Valley Road in the City of Folsom. We look forward to working with you and your traffic consultant to ensure that the EIR proposes specific mitigation measures and funding sources to prevent further degradation of adequate levels of service along this regional thoroughfare.

Sincerely,

Bill Kime
City Manager

cc: Mayor Kipp
Charles Townsend, City Planning Commission
Brad Kortick, Community Development Director
Ron Parker, City Engineer

BK/lm

CITY OF FOLSOM
50 Natoma Street
Folsom, California 95630
(916) 355-7200

February 11, 1987

Mr. Larry Walrod
Planning Director
El Dorado County Planning Division
360 Fair Lane
Placerville, CA 95667

Re: Comments on Draft EIR - Northwest El Dorado Hills Project

Dear Mr. Walrod:

Thank you for the opportunity to review the above document. The City of Folsom is greatly concerned about the lack of analysis contained in the EIR regarding proposed traffic impacts along Green Valley Road. The EIR indicates that Green Valley Road currently carries about 9900 vehicles per day at a Level of Service B. Since the analysis uses daily traffic volumes, we presume that current a.m. and p.m. peak hour volumes would produce a lower level of service at those times. This is not reflected in the text of the EIR.

In addition, the EIR indicates that Green Valley Road will carry 35% of the external trips from the proposed project into and through the City of Folsom. This could total at least an additional 8500 vehicle trips using Green Valley Road each day, which will create a Level of Service F condition within the City of Folsom. Of greatest concern of all, however, is the fact that the EIR proposes to mitigate these adverse impacts on Green Valley Road by adding two additional lanes of travel west of El Dorado Hills Blvd. only to the Sacramento County Line at a cost of $2 million. Given the regional nature of Green Valley Road, how does the EIR propose to mitigate the adverse impact of creating a Level of Service F condition on the Folsom side of the county line? The courts have clearly held that EIR's must consider the impacts of a proposed action across jurisdicitional lines and propose feasible mitigation measures to avoid those impacts. To do otherwise is to avoid the mandate of CEQA.

Sincerely,

Bill Kime
City Manager

cc: Mayor Kipp
Charles Townsend, City Planning Commission
Brad Kortick, Community Development Director
Ron Parker, City Engineer

BK/lm

River West Developments

7700 College Town Drive, Suite 201
Sacramento, CA 95826-2397
(916) 381-1115

February 13, 1987

Mr. Larry Walrod
Planning Director
El Dorado County Planning Division
360 Fair Lane
Placerville, California 95667

RE: Notice of Preparation of a Draft Environmental Impact Report

Dear Mr. Walrod:

Thank you for giving us the opportunity to respond to the Notice of Preparation relating to the El Dorado Hills Investors, Ltd. project.

Please be advised that the Russell Ranch Partnership intends on submitting an application to the County of El Dorado requesting a General Plan amendment, zoning change and approval of a schematic development plan for the 1050± acres of land located on the western border of the county line. A description of the Russell Ranch property is enclosed for your review.

We are currently in the process of meeting with County officials in an attempt to develop the preliminary plans for the project. Although there may be changes to our tentative plans, one possible development scheme includes approximately 2900 dwelling units on 900 acres, 50 acres of commercial uses and 100 acres for uses comprised of open space, recreation, a school and internal roadway. A more detailed explanation of the uses are depicted on the enclosed chart.

We would ask that the El Dorado Hills Investors, Ltd. environmental impact report to consider the conceptual development plans of the Russell Ranch project when addressing the cumulative impacts of growth, traffic and circulation, air quality, water supply and sewer demand.

Please call if you have any questions or comments regarding the matters raised in this letter.

Very truly yours,

Stefan Manolakas
General Counsel

SMmsll

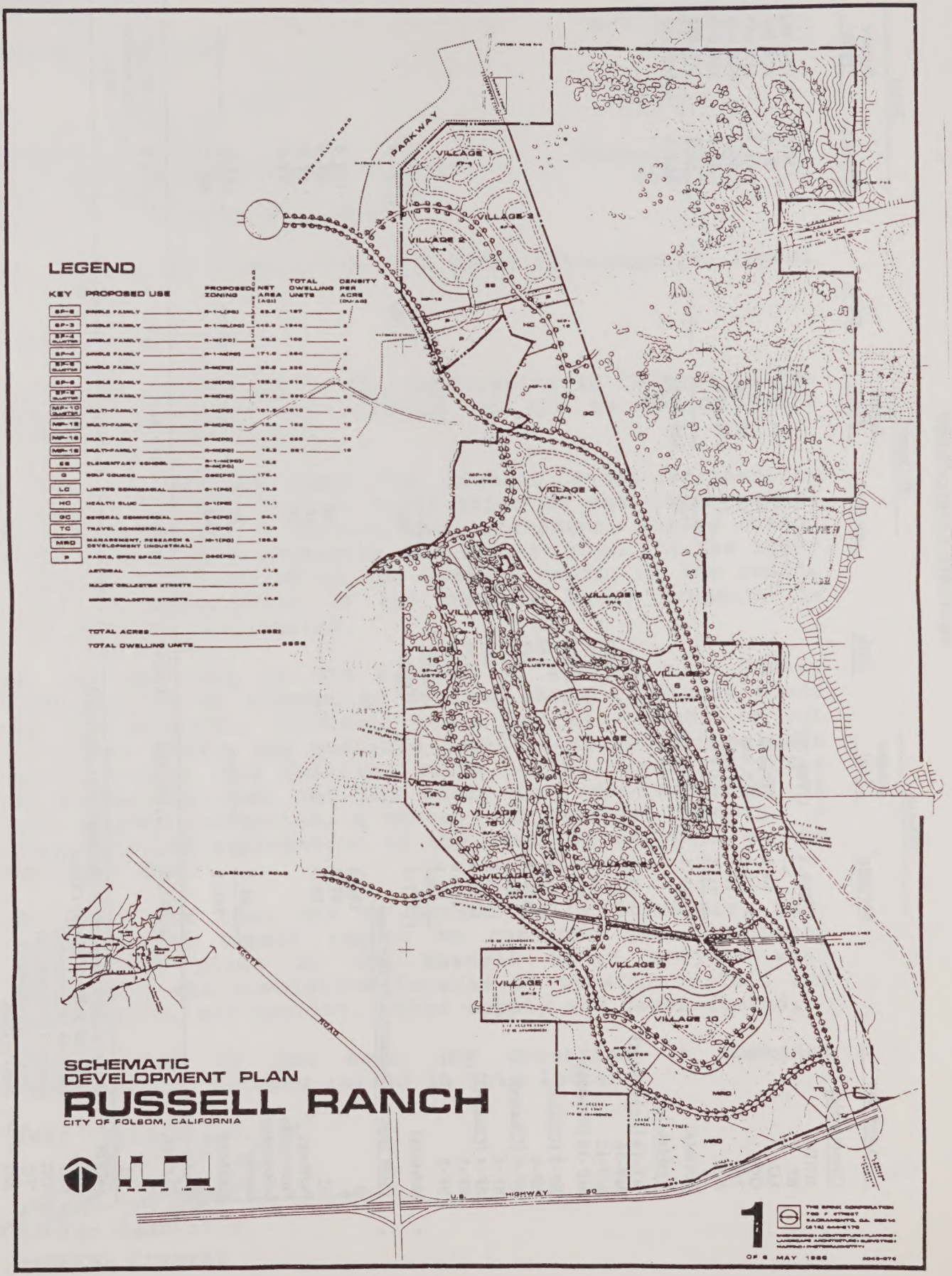
Enclosure

TABLE 1-3: RUSSELL RANCH

PROPOSED DEVELOPMENT

Land Use	Folsom Acreage*	Folsom Square Feet	Folsom DU's	El Dorado Acreage	El Dorado Square Feet	El Dorado DU's	Total Acreage	Total Square Feet	Total DU's
Commercial									
MRD	156.5	1,704,285		--	--		156.5	1,704,285	
BP	--	--		20	174,240		20.0	174,240	
LC	10.8	117,612		--	--		10.8	117,612	
GC	24.1	262,449		10	87,120		34.1	349,569	
TC	13.0	141,570		20	174,240		33.0	315,810	
HC	11.1	120,879					11.1	120,879	
Subtotal	215.5	2,346,795		50	435,600		265.5	2,782,395	
Residential									
MF-18 (Apartment)	12.3		221						
MF-16	51.8		828						
MF-12	13.8		165						
MF-10 (Cluster)	101.8		1,018						
SF-8 (Cluster	27.5		220						
SF-6	135.9		815						
SF-6 (Cluster)	56.0		336						
SF-4	171.0		684						
SF-4 (Cluster)	49.5		198						
SF-3	448.8		1,346						
SF-2	63.9		127						
Subtotal	1,132.3		5,958	900		2,900	2,032.3		8,858
Open Spaces/Recreation/Other Uses									
G	175.4						175.4		
P	47.6			50			97.6		
SC	16.9			10			26.9		
Parkway Easements Interchange Roads	94.3			10			10.0		
				30			124.3		
Subtotal	334.2			100			434.2		
TOTAL	1,682.0	2,346,795	5,958	1,050	435,600	2,900	2,732.0	2,782,495 Commercial Space	8,858

MRD - Management, Research & Development (Industrial)
BP - Business & Professional Office
LC - Limited Commercial
GC - General Commercial
TC - Travel Commercial
HC - Health Club
G - Golf Course
P - Parks - Open Space
SC - School
MF - Multi-Family
SF - Single-Family
* Based on May 1986 Schematic Development Plan.


LEGEND
KEY
PROPOSED USE
PROPOSED ZONING
NET AREA (ACS)
TOTAL DWELLING UNITS
DENSITY PER ACRE (DU/AC)
SP-2 SINGLE FAMILY
SP-3 SINGLE FAMILY
SP-4 CLUSTER SINGLE FAMILY
SP-5 SINGLE FAMILY
SP-5 CLUSTER SINGLE FAMILY
SP-6 SINGLE FAMILY
SP-6 CLUSTER SINGLE FAMILY
MP-10 (MULTI) MULTI-FAMILY
MP-12 MULTI-FAMILY
MP-14 MULTI-FAMILY
MP-15 MULTI-FAMILY
ES ELEMENTARY SCHOOL
G GOLF COURSE
LC LIMITED COMMERCIAL
HC HEALTH CLUB
GC GENERAL COMMERCIAL
TC TRAVEL COMMERCIAL
MRO MANAGEMENT, RESEARCH & DEVELOPMENT (INDUSTRIAL)
P PARKS, OPEN SPACE
ARTERIAL
MAJOR COLLECTOR STREETS
MINOR COLLECTOR STREETS
TOTAL ACRES
TOTAL DWELLING UNITS
PARKWAY
GREEN VALLEY ROAD
VILLAGE 1
VILLAGE 2
VILLAGE 3
VILLAGE 4
VILLAGE 5
VILLAGE 6
VILLAGE 7
VILLAGE 8
VILLAGE 9
VILLAGE 10
VILLAGE 11
VILLAGE 12
VILLAGE 13
VILLAGE 14
VILLAGE 15
VILLAGE 16
VILLAGE 17
VILLAGE 18
VILLAGE 19
CLARKSVILLE ROAD
SCOTT ROAD
U.S. HIGHWAY 50
SCHEMATIC
DEVELOPMENT PLAN
RUSSELL RANCH
CITY OF FOLSOM, CALIFORNIA
1
OF 6
MAY 1985

EL DORADO HILLS
COMMUNITY SERVICES DISTRICT

831 REDWOOD LANE • EL DORADO HILLS, CALIFORNIA 95630 • TELEPHONE 916-933-6624

February 17, 1987

Mr. Larry Walrod, Planning Director
Community Development Department
360 Fair Lane
Placerville, CA 95667

RE: EDH Specific Plan

Dear Larry:

The Planning Committee for our Board of Directors has asked me to forward the following comments to you concerning the El Dorado Hills Specific Plan.

1. The EIR should address only those recreation facilities that are currently available to the CSD. The forty-acre park should not be considered as a mitigation measure unless the EIR addresses alternate funding mechanisms for the park development.

2. The type and numbers of recreation facilities that will be required to serve the population of the new project (i.e. tennis courts, baseball fields, basketball courts, etc.).

3. Address, in depth, funding measures which can be implemented by the district, county, or developer that will finance recreational facility construction.

4. A project wide trail system to connect open space to residential areas.

5. Address recreation facilities requirements for high density/multi-family residential areas.

6. EIR should address impact upon traffic flow and congestion on new streets as well as existing streets, especially Green Valley Road, El Dorado Hills Boulevard, Bass Lake Road, and other impact streets/roads, and the signalization of critical intersections.

RE: EDH Specific Plan

7. EIR should address drainage and the management of increased water flow due to the loss of natural vegetation and ground cover and the maintenance of proposed drainage systems along or under major streets and roads.

8. EIR should address ownership and maintenance of proposed open space/greenbelt areas as well as ownership/maintenance of all landscaped corridors.

The notice of preparation that we received from your office was dated December 24th, however, we did not receive it until January 20th.

Sincerely,

Velma

VELMA GAMBLES
District Administrator

Appendix C

VEGETATION, WILDLIFE, AND AQUATIC RESOURCES

Common and Scientific Names of Plant Species

Common Name	Scientific Name
Beardgrass	*Andropogon glomeratus*
Bedstraw	*Galium porrigens*
Blue oak	*Quercus douglasii*
Brodiaea	*Brodiaea* spp.
Buckbrush	*Ceanothus cuneatus*
Buckeye	*Aesculus californicus*
Buttonbush	*Cephalanthus occidentalis*
California grape	*Vitis californicus*
Cattails	*Typha angustifolia*
Clover	*Trifolium* spp.
Coffeeberry	*Rhanus californicus* subsp. *tomentella*
Cottonwood	*Populus fremontii*
Curly dock	*Rumex crispus*
Cut-leaved geranium	*Geranium dissectum*
Deer grass	*Muhlenbergia rigins*
Digger pine	*Pinus sabiniana*
Fiddleneck	*Amsinckia intermedia*
Filaree	*Erodium* spp.
Foxtail barley	*Hordeum leporinum*
Goldfields	*Lasthenia californica*
Himalaya berry	*Rubus procerus*
Interior live oak	*Quercus wislizenii*
Iris	*Iris* sp.
Larkspur	*Delphinium* spp.
Ludwigia	*Ludwigia palustris*
Lupine	*Lupinus* spp.
Owls clover	*Orthocarpus* spp.
Poison oak	*Toxicodendron diversilobum*
Popcorn flower	*Plagiobothrys* spp.
Poppy	*Eschscholzia lobbii* and *californica*
Rabbitsfoot grass	*Polypogon monspeliensis*
Ripgut Brome	*Bromus diandrus*
Rush	*Juncus effusus* var. *pacificus*
Sanicle	*Sanicula crassicaulis*
Smartweed	*Polygonum hydropiper*
Snowberry	*Symphoricarpus*
Soft chess	*Bromus mollis*
Spike rush	*Eleocharis montevidensis*
Toyon	*Heteromeles arbutifolia*
Tule	*Scirpus* sp.
Valley oak	*Quercus lobata*
Yanow	*Achillea lanulosa*
Yellowpine	*Pinus ponderosa*

Common and Scientific Names of Plant Species (Continued)

Common Name	Scientific Name
Yerba santa	*Eriodictyon californicum*
Water-cress	*Rorippa nasturtium - aquiticum*
White-leaved manzanita	*Arctostaphylos viscida*
Wild oats	*Avena barbata*
Willow	*Salix* spp.
Woodrush	*Luzula subsessilis*

Common and Scientific Names of Wildlife Species

The following list identifies wildlife species that are likely to occur within the Plan area at some time during the year. Those species observed during the field surveys are noted with an asterisk.

Common Name	Scientific Name
AMPHIBIANS:	
California slender salamander	Batrachoseps attenuatus
Pacific treefrog	Hyla regilla*
Bullfrog	Rana catesbeiana
Western toad	Bufo boreas
REPTILES:	
Western pond turtle	Clemmys marmorata
Western fence lizard	Sceloporus occidentalis
Southern alligator lizard	Gerrhonous multicarinatus
Gilbert's skink	Eumeces gilberti
Racer	Coluber constrictor
Gopher snake	Pituophis melanoleucus
Ringneck snake	Diadophis punctatus
Sharp-tailed snake	Contia tenuis
Common garter snake	Thamnophis sirtalis
Western terrestrial garter snake	T. elegans
Western aquatic garter snake	T. couchi
Common kingsnake	Lampropeltis getulus
Western rattlesnake	Crotalus viridis
BIRDS:	
Great blue heron	Ardea herodias*
Green-backed heron	Butorides striatus
Great egret	Casmerodius albus*
Snowy egret	Egretta thula
Wood duck	Aix sponsa*
Mallard	Anas platyrhynchos*
American wigeon	Anas americana
Bufflehead	Bucephala albeola
Ruddy duck	Oxyura jamaicensis
Common merganser	Mergus merganser
Cinnamon teal	A. cyanoptera
Turkey vulture	Cathartes aura*
Black-shouldered kite	Elanus leucurus*
Cooper's hawk	Accipiter cooperii
Sharp-shinned hawk	Accipiter striatus
Red-shouldered hawk	Buteo lineatus
Red-tailed hawk	B. jamaicensis*

BIRDS: (continued)

Swainson's hawk	Buteo swainsoni
Golden eagle	Aquila chrysaetos
Prairie falcon	Falco mexicanus
Peregrine falcon	Falco peregrinus
American kestrel	Falco sparverius*
Wild turkey	Meleagris gallopavo*
California quail	Lophortyx californicus*
American coot	Fulica americana*
Killdeer	Charadrius vociferus*
Long-billed curlew	Numenius americanus
Ring-billed gull	Larus delawarensis
California gull	L. californicus
Mourning Dove	Zenaida macroura
Band-tailed pigeon	Columba fasciata
Common barn owl	Tyto alba
Screech owl	Otus asio
Great horned owl	Bubo virginianus
Common poorwill	Chordeiles minor
White-throated swift	Aeronautes saxatalis)
Anna's hummingbird	Calypte anna*
Rufous hummingbird	Selasphorus rufus
Allen's hummingbird	S. sasin
Belted kingfisher	Megaceryle alcyon
Lewis' woodpecker	Melanerpes lewis*
Northern flicker	Colaptes auratus*
Acorn woodpecker	Melanerpes formicivorous*
Downy woodpecker	Picoides pubescens*
Nuttall's woodpecker	Picoides nuttallii
Western kingbird	Tyrannus verticalis
Ash-throated flycatcher	Myiarchus cinerascens*
Black phoebe	Sayornis nigricans*
Say's phoebe	S. saya*
Western flycatcher	Empidonax difficilis
Western wood pewee	Contopus sordidulus
Horned lark	Eremophila alpestris*
Violet-green swallow	Tachycineta thalassina
Tree swallow	Iridoprocne bicolor
Northern rough-winged swallow	Stelgidopteryx serripennis
Barn swallow	Hirundo rustica
Cliff swallow	Petrochelidon pyrrhonota
Scrub jay	Aphelocoma coerulescens*
Yellow-billed magpie	Pica nuttalli*
American crow	Corvus brachyrhynchos*
Plain titmouse	Parus inornatus*
Bushtit	Psaltriparus minimus*
White-breasted nuthatch	Sitta carolinensis*
Red-breasted nuthatch	S. canadensis
Brown creeper	Certhia familiaris
Wrentit	Chamaea fasciata
House wren	Troglodytes aedon*
Bewick's wren	Thyromanes bewickii*
Northern mockingbird	Mimus polyglottos

BIRDS: (continued)

American robin	Turdus migratorius*
Varied thrush	Ixoreus naevius
Western bluebird	Sialia mexicana*
Blue-gray gnatcatcher	Polioptila caerulea
Golden-crowned kinglet	Regulus satrapa
Ruby-crowned kinglet	R. calendula*
Water pipit	Anthus spinoletta*
Cedar waxwing	Bombycilla cedrorum
Phainopepla	Phainopepla nitens
Loggerhead shrike	Lanius ludovicianus
European starling	Sturnus vulgaris*
Hutton's vireo	Vireo huttoni*
Warbling vireo	V. gilvus
Orange-crowned warbler	Vermivora celata
Yellow-rumped warbler	Dendroica coronata*
Black-throated gray warbler	Dendroica nigrescens
House sparrow	Passer domesticus
Western meadowlark	Sturnella neglecta*
Red-winged blackbird	Agelaius phoeniceus*
Northern oriole	Icterus galbula
Brewer's blackbird	Euphagus cyanocephalus*
Brown-headed cowbird	Molothrus ater
Western tanager	Piranga ludoviciana
Black-headed grosbeak	Pheucticus melanocephalus
Purple finch	Carpodacus purpureus
House finch	C. mexicanus*
American goldfinch	Carduelis tristis
Lesser goldfinch	C. psaltria
Pine siskin	C. pinus
Rufous-sided towhee	Pipilo erythrophthalmus*
Brown towhee	P. fuscus
Savannah sparrow	Passerculus sandwichensis*
Lark sparrow	Chondestes grammacus*
Dark-eyed junco	Junco hyemalis*
White-crowned sparrow	Zonotrichia leucophrys*
Golden-crowned sparrow	Z. atricapilla*
Song sparrow	Melospiza melodia*

MAMMALS:

Opossum	Didelphis virginiana
Ornate shrew	Sorex ornatus
Broad-footed mole	Scapanus latimanus
Yuma myotis	Myotis yumanensis
Small-footed myotis	M. leibii
California myotis	M. californicus
Hoary bat	Lasiurus cinereus
Red bat	L. borealis
Western pipistrelle	Pipistrellus hesperus
Big brown bat	Eptesicus fuscus
Townsend's big-eared bat	Plecotus townsendii
Pallid bat	Antrozous pallidus

MAMMALS: (continued)

Brazilian free-tailed bat	Tadarida brasiliensis
Black-tailed jackrabbit	Lepus californicus
Brush rabbit	Sylvilagus bachmani
Desert cottontail	S. auduboni*
California ground squirrel	Spermophilus beecheyi
Western gray squirrel	Sciurus griseus*
Botta's pocket gopher	Thomomys bottae*
California pocket mouse	Perognathus californicus
Western harvest mouse	Reithrodontomys megalotis
Deer mouse	Peromyscus maniculatus
Dusky-footed woodrat	Neotoma fuscipes
California vole	Microtus californicus
Coyote	Canis latrans
Gray fox	Urocyon cinereoargenteus
Raccoon	Procyon lotor
Long-tailed weasel	Mustela frenata
Western spotted skunk	Spilogale gracilis
Striped skunk	Mephitis mephitis
Mountain lion	Felis concolor
Bobcat	Felis rufus
Mule deer	Odocoileus hemionus

Common and Scientific Names of Fishes

Common Name	Scientific Name
California roach	*Hesperoleucus symmetricus*
Golden shiner	*Notemigonus crysoleucas*
Sacramento squawfish	*Ptychocheilus grandis*
Sacramento sucker	*Catostomus occidentalis*
Largemouth bass	*Micropterus salmoides*
Bluegill	*Lepomis macrochirus*
Green sunfish	*Lepomis cyanellus*
Redear sunfish	*Lepomis microlophus*
Channel catfish	*Ictalurus punctatus*

Appendix D

STATE BUILDING CODE
PART 2, TITLE 24, CALIFORNIA ADMINISTRATIVE CODE

ENERGY CONSERVATION STANDARDS FOR NEW BUILDINGS OF OCCUPANCY R (RESIDENTIAL BUILDINGS) OTHER THAN APARTMENT HOUSES WITH FOUR OR MORE HABITABLE STORIES AND HOTELS

Energy Performance Standards

Sec. 2-5351.

(a) **Energy Budgets.** Buildings shall be designed to use no more British thermal units (Btu) of energy from depletable sources than that specified in Tables 2-53X and 2-53Y for the appropriate building type and appropriate climate zone shown in Figure 2-53G. The maximum allowable energy use from depletable sources is the sum of the annual space conditioning budget and the annual water heating budget. The annual space conditioning budget is the product of the square feet of conditioned floor areas and the total space conditioning budget shown in Table 2-53X. Energy required for building cooling must be included in the design energy budget even if the buildings plans do not include that air conditioning will be installed. New buildings shall also meet the requirements of Sections 2-5352 (Mandatory Features and Devices), and Sections 2-5312 through 2-5318 where applicable.

EXCEPTION: If a single continuous subdivision or tract falls in more than one climate zone, all buildings in the subdivision or tract shall be designed to meet the energy budget of the climate zone which contains the most dwelling units.

NOTE: The California Energy Commission shall periodically update, publish and make available to interested persons and local building departments a document entitled "California Climate Zone Descriptions for New Buildings", which shall contain a precise description of the metes and bounds for climate zone boundaries depicted in Figure 2-53G and a list of the communities in each zone.

(b) **Calculation of Energy Consumption.** The application for a building permit shall include documentation which demonstrates, using an approved calculation method, that the new building has been designed to not exceed the allowable energy use in Tables 2-53X and 2-53Y for the appropriate climate zone.

TABLE 2-53X
ANNUAL SPACE CONDITIONING BUDGETS [1]

Climate Zone	Single Family [2] Dwellings and Lodging Houses			Multi-Family Buildings: With Common Walls [3] but No Common Floor/Ceilings			Multi-Family Buildings: All Others [4]		
	Heating	Cooling	Total	Heating	Cooling	Total	Heating	Cooling	Total
1	11.1	0.1	11.2	12.2	0	12.2	12.2	0	12.2
2	14.5	8.7	23.2	15.7	5.8	21.5	15.7	5.8	21.5
3	12.3	2.8	15.1	13.7	1.6	15.3	13.7	1.6	15.3
4	9.9	5.7	15.6	11.1	3.9	15.0	11.1	3.9	15.0
5	10.3	3.5	13.8	11.8	2.4	14.2	11.8	2.4	14.2
6	5.2	11.5	16.7	5.7	7.7	13.4	5.7	7.7	13.4
7	2.7	3.9	6.6	3.2	1.8	5.0	3.2	1.8	5.0
8	3.5	13.6	17.1	4.2	8.3	12.5	4.2	8.3	12.5
9	6.9	17.8	24.7	7.4	14.3	21.7	7.4	14.3	21.7
10	5.6	20.9	26.5	6.9	13.9	20.8	6.9	13.9	20.8
11	16.5	22.0	38.5	16.7	14.9	31.6	16.7	14.9	31.6
12	15.8	14.2	30.0	15.0	9.0	24.0	15.0	9.0	24.0
13	12.4	23.0	35.4	11.3	14.9	26.2	11.3	14.9	26.2
14	10.7	27.0	37.7	11.5	19.7	31.2	11.5	19.7	31.2
15	1.4	38.9	40.3	1.8	27.2	29.0	1.8	27.2	29.0
16	20.8	8.9	29.7	19.8	5.9	25.7	19.8	5.9	25.7

NOTE NO. 1: Thousands of Btu per square foot of conditioned floor space per year.

NOTE NO. 2: The heating (cooling) budgets may be increased by 15 percent if the installed heating (installed cooling) system has all its distribution ducts and plenums in conditioned space. The heating (cooling) budgets may be increased by multiplying the budget values by $[1 + (0.15)(R_d - 2.1)/(R_d + 1.3)]$ when the installed heating (installed cooling) system has ducts in unconditioned space and duct insullation R-value (R_d) is greater than 2.1.

NOTE NO. 3: The heating (cooling) budgets may be increased by 10 percent if the installed heating (installed cooling) system has all its distribution ducts and plenums in conditioned space. The heating (cooling) budgets may be increased by multiplying the budget values by $[1 + (0.10)(R_d - 2.1)/(R_d + 1.3)]$ when the installed heating (installed cooling) system has ducts in unconditioned space and duct insulation R-value (R_d) is greater than 2.1.

NOTE NO. 4: The heating (cooling) budgets may be increased by 5 percent if the installed heating (installed cooling) system has all its distribution ducts and plenums in conditioned space. The heating (cooling) budgets may be increased by multiplying the budget values by $[1 + (0.05)(R_d - 2.1)/(R_d + 1.3)]$ when the installed heating (installed cooling) system has ducts in unconditioned space and duct insulation R-value (R_d) is greater than 2.1.

TABLE 2-53Y
ANNUAL WATER HEATING BUDGETS

Climate Zone	Single Family Dwellings and Lodging Houses	Multi-Family Buildings: With Common Walls but No Common Floor/Ceilings	Multi-Family Buildings: All Others
1	22,200	22,200	13,000
2	20,800	20,800	12,300
3	20,800	20,800	12,300
4	20,600	20,600	12,300
5	20,600	20,600	12,300
6	19,400	19,400	11,500
7	19,400	19,400	11,500
8	19,400	19,400	11,500
9	19,400	19,400	11,500
10	19,400	19,400	11,500
11	20,400	20,400	12,200
12	20,600	20,600	12,300
13	20,400	20,400	12,200
14	20,900	20,900	12,300
15	18,700	18,700	11,400
16	22,900	22,900	13,100

NOTE: Thousands of Btu per dwelling unit per year.

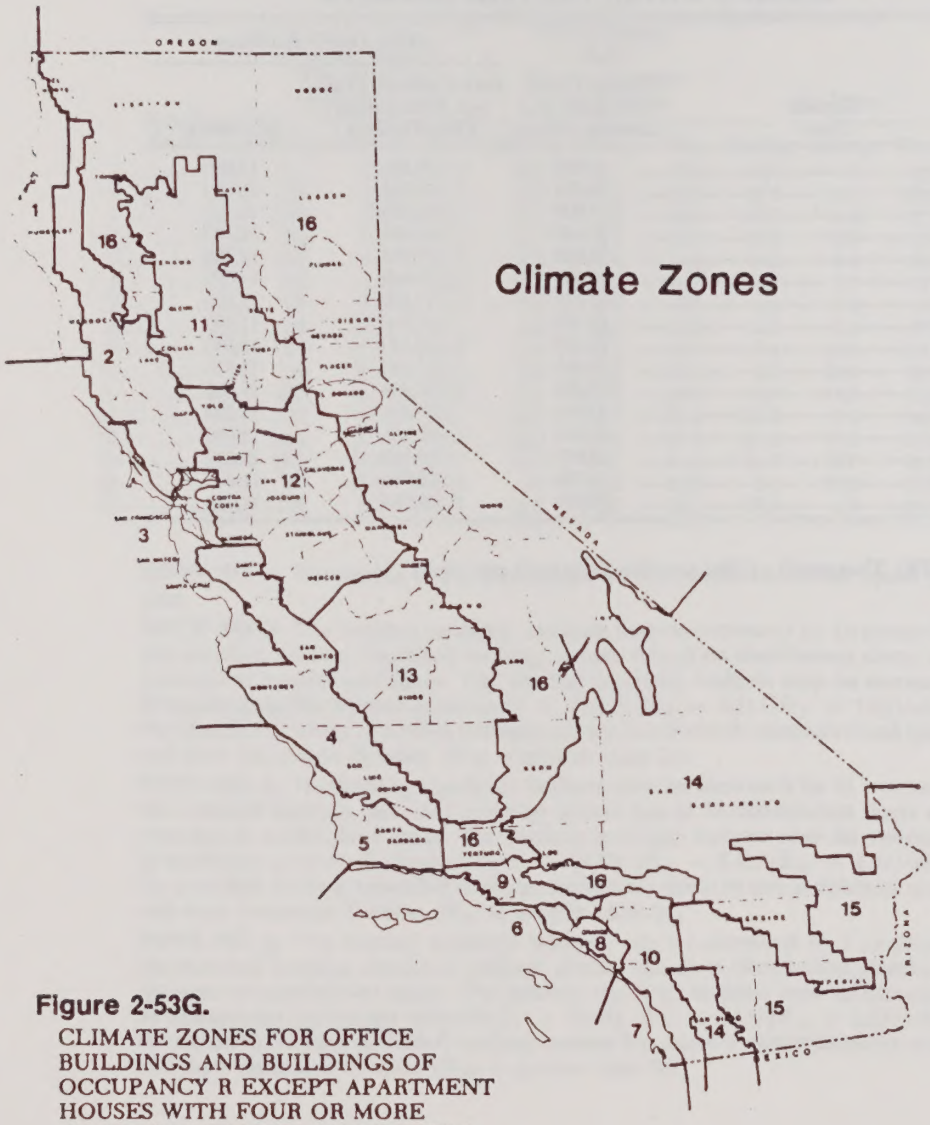


Figure 2-53G.
CLIMATE ZONES FOR OFFICE BUILDINGS AND BUILDINGS OF OCCUPANCY R EXCEPT APARTMENT HOUSES WITH FOUR OR MORE HABITABLE STORIES AND HOTELS

(c) **Alternative Component Packages.** The energy budget requirements of 2-5351 (a) may be met by installing one of the alternative packages of components shown in Tables 2-53Z1 through 2-53Z16 for the appropriate climate zone shown in Figure 2-53G. Installed components shall meet the following requirements.

1. **Insulation.**
   A. Ceiling, wall, slab floor perimeter, and raised floor insulation shall be installed which has an R-value equal to or higher than that shown in Table 2-53Z1 through 2-53Z16. The minimum ceiling, wall (including heated basements and crawlspaces), and raised floor R-values shown are for insulation installed between wood framing members. Insulation in other wall systems may meet equivalent minimum R-values that consider the effects of all elements of the wall system.
   EXCEPTION: Raised floor insulation may be omitted if the foundation walls are insulated to meet the wall insulation minimums shown in Tables 2-53Z1 through 2-53Z16, a vapor barrier is placed over the entire floor of the crawlspace, and the vents are fitted with operable louvers.
   B. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less.
   EXCEPTION: Perimeter insulation is not required along the slab edge between conditioned space and the concrete slab of an attached unconditioned enclosed space.
2. **Glazing.**
   A. Glazing shall be installed which has U-values equal to or lower than those shown in Tables 2-53Z1 through 2-53Z16. The types of glazing which meet the maximum U-value requirements are shown in the Winter column in Table 8 on page 23.28 of the 1981 ASHRAE Handbook of Fundamentals, without adjustment for the effect of the glazing framing.
   B. Total glazing area shall not exceed the percentage of conditioned floor area specified in Tables 2-53Z1 through 2-53Z16.
   C. South-facing glazing area shall not be less than the percentage of conditioned floor area in Tables 2-53Z1 through 2-53Z16. South-facing glazing includes glazing in ceilings which is horizontal or tilted to the south. East and west-facing glazing includes glazing in ceilings which is tilted to the east and west, respectively.
3. **Shading.**
   A. Shading of south facing glazing required in Tables 2-53Z1 through 2-53Z16 shall be installed so that the south facing glazing is fully shaded at solar noon on August 21 and fully exposed to direct sunlight at solar noon on December 21. South shading requirements may be met by an optimally designed overhang if one is listed in Tables 2-53Z1 through 2-53Z16 or alternatively a movable shading device described in C below.
   b. Shading of west-facing glazing required in Tables 2-53Z1 through 2-53Z16 shall be installed so that the west-facing glazing is fully shaded at 5:00 p.m. (Solar time) on August 21 and fully exposed to direct sunlight at 3:00 p.m. (Solar time) on December 21. Shading requirements for west-facing glazing may be met by a movable shading device described in C below.
   NOTE: Permanently tinted glazing may not be used to meet the shading requirements for section 2-5351 (c) 3.A. and B.
   C. Movable shading devices include but are not limited to operable louvers, movable external shading devices, and internal shades which meet the shading coefficient requirements in Tables 2-53Z1 through 2-53Z16.
4. **Thermal Mass.** Thermal mass required in Tables 2-53Z1 through 2-53Z16 shall be installed to meet or exceed the minimum heat capacity and surface area ratio shown in Table 2-5AA. Distributed mass in floors, walls, and ceilings which is directly exposed to the conditioned space may be considered

in meeting this requirement. Thermal mass includes but is not limited to hard-surfaced slab floors, masonry walls and fireplaces, and gypsum board or plaster in excess of ½ inch thickness on ceilings and walls. Thermal mass shall not include carpeted slab floors and heavy weight exterior walls which are installed to meet the alternative wall insulation minimums shown in parentheses in Tables 2-53Z1 through 2-53Z16.

Table 2-53AA
MINIMUM THERMAL MASS REQUIREMENTS

Building Type	*Surface Area Ratio* [1]	*Minimum Heat Capacity* [2]
Single Family Dwellings and Lodging Houses	7.8	36.5
Multi-Family Buildings with Common Walls but with no Common Floors/Ceilings	5.0	23.1
All Other Multi-Family Buildings	4.0	18.4

NOTE NO. 1. Surface Area Ratio $= \frac{A_{mass}}{A_{glazing}}$

NOTE NO. 2. Minimum Heat Capacity $= \frac{A_{mass} \times D \times C \times t}{A_{glazing}}$

Where A mass = the surface area of exposed mass, ft^2;
D = the density of the mass, lb/ft^3;
C = the specific heat of the mass, Btu/lb/°F;
t = the thickness of the mass, ft, up to a maximum thickness of ⅙ foot (2 inches); and
A glazing = the surface area of the south facing glazing, ft^2.

5. **Continuous Infiltration Barrier.** Continuous infiltration barriers required in Tables 2-53Z1 through 2-53Z16 shall be installed over the inside face of framing in ceilings and over the inside or outside face of framing in exterior walls. Where ceilings are plank and beam construction exposed to the conditioned space, the barrier shall be placed on top of the planking, and the wall/ceiling joints shall be sealed with caulking or sealant. All openings in plumbing, electrical conduits and boxes, gas lines and valves, luminaires, ducts, flues and other elements which penetrate the infiltration barrier, shall be sealed with permanent tape or sealant.
6. **Electrical Outlet Plate Gaskets.** Electrical outlet plate gaskets required in Tables 2-53Z1 through 2-53Z16 shall be installed on all receptable, switch or other electrical boxes in exterior and interior walls.
7. **Heating System Type.** Heating system types shall be installed as required in Tables 2-53Z1 through 2-53Z16. A gas heating system is a natural or liquefied petroleum gas heating system.
8. **Air-to-Air Heat Exchanger.** The air-to-air heat exchanger required in Tables 2-53Z1 through 2-53Z16 shall be capable of ventilating the dwelling unit at a rate equal to at least 0.7 times the volume of the conditioned space per hour. An air-to-air heat exchanger is a device which will reduce the heat losses or gains which occur when a building is mechanically ventilated, by transferring heat between the conditioned air being exhausted and the unconditioned air being supplied. This requirement may be met by a central mechanical ventilation system with an integral air-to-air heat exchanger or by one or more single package room mechanical ventilators with an integral air-to-air heat exchanger.
9. **Solar Domestic Water Heating System.** Solar domestic water heating systems with electric resistance backup heating installed to meet the requirements for Alternative Component Package A or B and solar domestic water heating systems with gas backup heating installed to meet the requirements for Alternative Component Package C in Tables 2-53Z1 through 2-53Z16 shall be designed as follows: The solar collectors must be sized so that the net

output from the solar system provides at least 60 percent of the annual water heating budget in Table 2-53Y. Net output from the solar system is the energy absorbed by the collectors less system pumping energy, pipe loss, and solar storage tank loss. Documentation specified by the Executive Director shall be submitted with the building permit application which demonstrates that this requirement is met.

(d) **Other Compliance Options.** The energy budget requirements of 2-5351(a) may be met by installing any alternative package of components certified by the Commission, by using a point system approved by the Commission, or by using any other calculation method approved by the Commission for use in complying with Section 2-5351(a).

(e) **Compliance by Averaging.** The energy budget requirements of 2-5351(a) may be met by using a method approved by the Commission that averages the energy performance of a group of buildings, or by installing any alternative package of components certified by the Commission as meeting the energy budgets when averaged in four cardinal directions.

If the energy budget requirements are met by averaging a group of residential buildings, the permit applicant must show that a simple arithmetic average of the estimated energy budget for all the buildings in a group is equal to or less than the prescribed maximum energy budget. To be eligible for this averaging approach, all buildings shall meet the following requirements:

1. All buildings in the group shall be of a particular model type, provided that each reverse plan and elevation of a specific model type shall be eligible for averaging in the same group of buildings.
2. All buildings in the group shall be located in the same contiguous subdivision, as defined in Section 66424 of the Government Code.
3. Applications for permits for all buildings in the group shall be filed on the same day and shall each indicate the group of buildings to which the averaging approach is to be applied.
4. The permit applicant for each building in the group shall provide to potential buyers of the building a notice indicating that it is part of a group of buildings for which compliance with energy conservation standards was made by averaging the performance of all the buildings in the group and that the performance of that building relative to the performance standard will be made available upon request.

(f) The energy budget requirements of 2-5351(a) may be met by installing any combination of building designs and measures whose calculated energy performance is equal to or better than that calculated for the same building and floor plan using either package D or E. Builders who use this approach must use the point system or any other calculation method approved by the Commission and must follow these steps:

1. Calculate the energy consumption or point system total of the proposed building, assuming the building includes all of the measures in either package D or E. Assume the building has the maximum amount of glazing allowed in either package for that climate zone and that this glazing is equally distributed in each of the four cardinal directions. Use this calculated energy consumption or point system total as the standard that the proposed building must meet.
2. Perform the same type of calculation, using the proposed building's actual glazing area, orientation, and distribution, and its actual energy conservation features. The building design complies with the energy budget requirement if the energy consumption or point system total calculated in this step is equal to or better than the standard established in Step 1.

NOTE: The performance method in subsection (f) has been authorized by statute and may be used in lieu of the performance methods authorized by subsection (d). When using the performance methods in section 2-5351(d),

the standard that the proposed building must meet is the energy budget set forth in Table 2-53X or, if the point system is used, zero points. When using the performance method authorized by statute, the standard that must be met will be whatever the calculation in Step 1 indicates, which will not necessarily be the energy budget in Table 2-53X or zero points.

(g) The annual water heating budgets specified in Table 2-53Y may be met by installing any gas water heating system that meets the minimum standards for efficiency and stand-by losses specified in Sections 2-5314 and 2-5318, and the requirements of Section 2-5352(h).

NOTE: Authority cited: Public Resources Code, Sections 25402, 25402.1, 25402.3, and 25402.5. Reference: Public Resources Code, Sections 25402, 25402.3, and 25402.5.

TABLE 2-53Z16.
ALTERNATIVE COMPONENT PACKAGES FOR CLIMATE ZONE 16

Component	Package A	Package B	Package C	Package D	Package E
BUILDING ENVELOPE					
Insulation Minimums					
Ceiling	R 38	R 38	R 30	R 38	R 38
Wall [1]	R 19	R 19	R 19	R 11	R 19
"Heavy" Walls	(R 9.5)	(R 7.0)	(R 7.5)	N/A	N/A
"Light Mass" Walls	[R 9.5]	[R 7.5]	[R 8.0]	N/A	N/A
Slab Floor Perimeter	R 7	R 7	R 7	R 7	N/A
Raised Floor	R 19	R 19	R 19	N/A	R 19
Attic [2]	NR	NR	NR	REQ	REQ
GLAZING					
Maximum U Value	0.65	0.65	0.65	0.65	0.65
Maximum Total Area	NR	16.0%	14.0%	16.0%	16.0%
Maximum Total Nonsouth Facing Area	9.6%	N/A	N/A	N/A	N/A
Minimum South Facing Area	6.4%	NR	NR	NR	NR
SHADING COEFFICIENT					
South Facing Glazing	NR	NR	NR	NR	NR
West Facing Glazing	NR	NR	NR	NR	NR
East Facing Glazing	NR	NR	NR	NR	NR
North Facing Glazing	NR	NR	NR	NR	NR
THERMAL MASS [3]	REQ	NR	NR	25%	NR
INFILTRATION CONTROL					
Continuous Barrier	NR	REQ	NR	NR	NR
Electrical Outlet Plate Gaskets	NR	REQ	NR	NR	NR
Air-to-Air Heat Exchanger	NR	REQ	NR	NR	NR
SPACE HEATING SYSTEMS					
If Gas, Seasonal Efficiency=	71%	71%	71%	79%	79%
If Heat Pump [4], A.C.O.P.=	MIN	MIN	MIN	2.8	2.8
SPACE COOLING SYSTEMS					
If Air Conditioner, SEER=	MIN	MIN	MIN	8.5	8.5
DOMESTIC WATER HEATING TYPE					
Gas, heat pump, or solar with any type backup?	YES	YES	Solar w/Gas Backup	YES	YES

LEGEND: NR = Not Required; N/A = Not Applicable; REQ = Required; A.C.O.P. = Adjusted Coefficient of Performance; MIN = minimum efficiencies required by Section 2-5314.

[1] The value in parentheses is the minimum R-value for the entire wall assembly if the wall weight exceeds 40 pounds per square foot. The value in brackets is the minimum R-value for the entire assembly if the heat capacity of the wall meets or exceeds the result of multiplying the bracketed minimum R-value by 0.65. The insulation must be integral with or installed on the outside of the exterior mass. The inside surface of the thermal mass, including plaster or gypsum board in direct contact with the masonry wall, shall be exposed to the room air. The exterior wall used to meet the R-value in parentheses cannot also be used to meet the above thermal mass requirement.

[2] Where an attic is required, it must be installed under not less than 75 percent of the roof that is over any conditioned space.

[3] To calculate the amount of thermal mass required for Package A (an option with passive solar design), use the method set forth in Section 2-5351(c)4.
Package D (an option for buildings with concrete slab floors) requires 25 percent of the floor area directly exposed to the conditioned space. To determine the floor area, count only the first floor in conditioned areas. Uncarpeted (e.g., linoleum or tiled) first floor areas, such as entry ways, kitchens, bathrooms, and conditioned utility rooms or closets may all be counted towards this requirement.

[4] If the building permit is applied for on or after August 1, 1983, an automatic setback thermostat must be installed in conjunction with a heatpump.

Mandatory Features and Devices

Sec. 2-5352. Any new building of occupancy R (except apartment houses with four or more habitable stories and hotels) shall have all of the following features and devices.

(a) **Ceiling Insulation.** The opaque portions of ceilings separating conditioned spaces from unconditioned spaces shall meet the requirements of either 1 or 2 below:

1. Ceilings shall be installed between framing members with insulation having an insulated thermal resistance of R-19 or greater.
   Insulation which is not penetrated by framing members may meet an equivalent minimum R-value which includes the effects of framing members on the above R-19 insulated ceiling.
2. The weighted average U-value of ceilings shall not exceed that which would result from using the insulation indicated in Section 2-5352(a) (1), including the effects of framing members.

(b) **Loose Fill Insulation.** When loose fill insulation is installed, the minimum installed weight per square foot shall conform with the insulation manufacturer's installed design density per square foot at the manufacturer's labeled R-value.

(c) **Wall Insulation.** The opaque portions of frame walls separating conditioned spaces from unconditioned spaces shall meet the requirements of either 1 or 2 below:

1. Framed walls shall be insulated between framing members with insulation having an installed thermal resistance of R-11 or greater. Framed foundation walls of heated basements or heated crawl spaces shall be insulated above the adjacent outside ground line with insulation having an installed thermal resistance of at least R-7.
   EXCEPTION: Insulation which is not penetrated by framing members may meet an equivalent minimum R-value which includes the effects of framing members on the above R-values.
2. The weighted average U-value of walls shall not exceed that which would result from using the insulation indicated in Section 2-5352(c) (1), including the effects of framing members.

(d) **Installation of Fireplaces.**

1. If a masonry or factory-built fireplace is installed, it shall have the following:
   A. Closable metal or glass doors covering the entire opening of the firebox.
      EXCEPTION: A door is not required if it would interfere with any device, permanently installed in the fireplace, that is designed to increase the circulation of heat.
   B. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least 6-square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper; and
      EXCEPTION NO. 1: An outside combustion air intake is not required if the fireplace will be installed over concrete slab flooring and the fireplace will not be located on an exterior wall.
      EXCEPTION NO. 2: An outside combustion air intake is not required in climate zones 5, 6, 7, 8, 9, 10, 14, or 15 if the fireplace will not be located near an exterior wall.
      A flue damper with a readily accessible control.
2. Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

(e) If an infiltration barrier is installed to meet the requirements of Section 2-5351, it must have an air porosity of less than 5 ft^3 per hour per square foot per inch of mercury pressure difference when tested in accordance with the require-

ments of ASTM E-283 (1973). If a vapor barrier functions as an infiltration barrier it shall be located on the inside of the wall framing.

(f) **Vapor Barriers.** In Climate Zones 14 and 16 shown in Figure 2-53G, a vapor barrier shall be installed on the conditioned space side of all insulation in all exterior walls, unvented attics, and unvented crawl spaces to protect insulation from condensation.

(g) **Space Conditioning Equipment Sizing.**

1. Natural gas and liquified petroleum gas central furnaces shall be sized to meet at least one of the following requirements:
   A. The total output heating capacity of furnaces in the building shall be less than 45,000 Btu/hr; or
   B. Output heating capacity shall be less than 1.3 times the sum of the design heat loss rate for the heating zone being serviced by the furnace and 10 Btu per hour per square foot of conditioned floor area in the zone; or
   C. Seasonal efficiency shall be greater than 1 percent above 71 percent for every 7,000 Btu/hr the output heating capacity exceeds either the building design heat loss rate or 45,000 Btu/hr, whichever is greater.

   The furnace output heating capacity shall be determined using the method described in the Department of Energy test procedures for measures of energy consumption in 42 Federal Register 20147–20181 (May 10, 1978).
2. Heating and cooling equipment shall be sized in accordance with the building design heat loss rate and heat gain rate, using a method set forth by the Executive Director, based on the ASHRAE Handbook and Product Directory, 1979 Equipment Volume, 1980 Systems Volume and 1981 Fundamentals Volume.

(h) **Setback Thermostats.** All heating systems shall have an automatic thermostat with a clock mechanism which the building occupant can program to automatically set back the thermostat set points for at least 2 periods within 24 hours.

EXCEPTION: Gravity gas wall heaters, floor heaters, and room heaters that are installed in additions need not comply with this requirement.

(i) **Water Heating System Insulation.** Storage type water heaters and storage and backup tanks for solar water heating systems shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater. Alternatively, such tanks may be insulated to a combined level of R-16, when both internal insulation and external wrap insulation are considered. Internal insulation can be included in the combined insulation level only where the R-value of such insulation has been labelled on the tank exterior by the manufacturer.

(j) **Lighting.** Lamps used in luminaires for general lighting in kitchens and bathrooms shall have an efficacy of not less than 25 lumens per watt. Luminaires which are the only lighting in a kitchen will be considered general lighting.

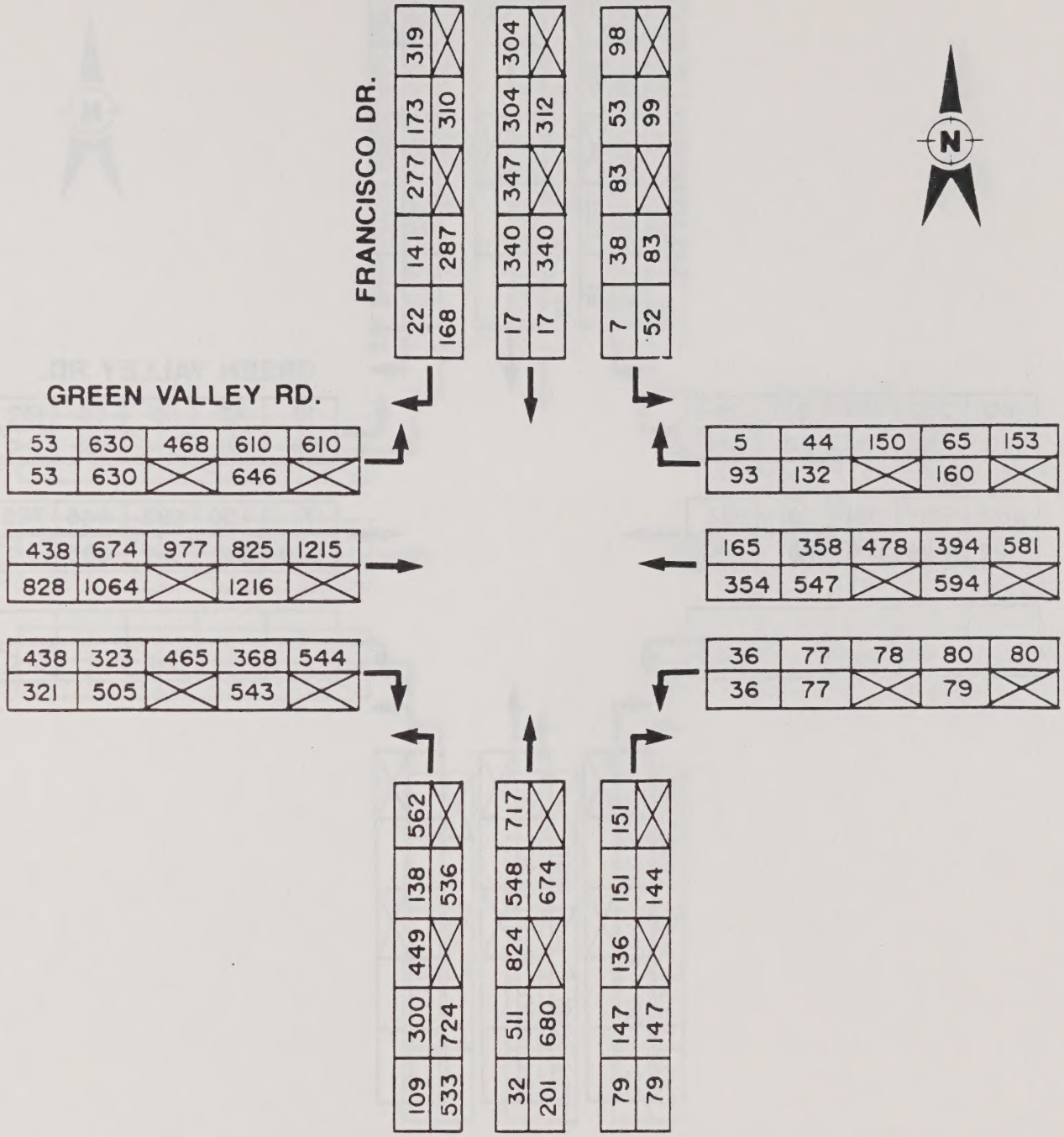
EXCEPTION: Luminaires which are the only lighting in a bathroom and lighting to be used only for specific visual tasks or decorative effect are exempt from this requirement. Such exempt lighting includes luminaires that are meant to light only a specific task area such as a kitchen counter or sink, a dining table, or a bathroom mirror.

(k) **Slab Edge Insulation.** Material used for slab edge insulation shall meet the following minimum specifications:

1. Water absorption rate no greater than 0.3 percent when tested in accordance with ASTM-C-272-33.
2. Water vapor transmission rate no greater than 2.0 perm/inch when tested in accordance with ASTM-C-355-64. Concrete slab perimeter insulation must be protected from physical damage and ultra violet light deterioration.

Appendix E

TRAFFIC

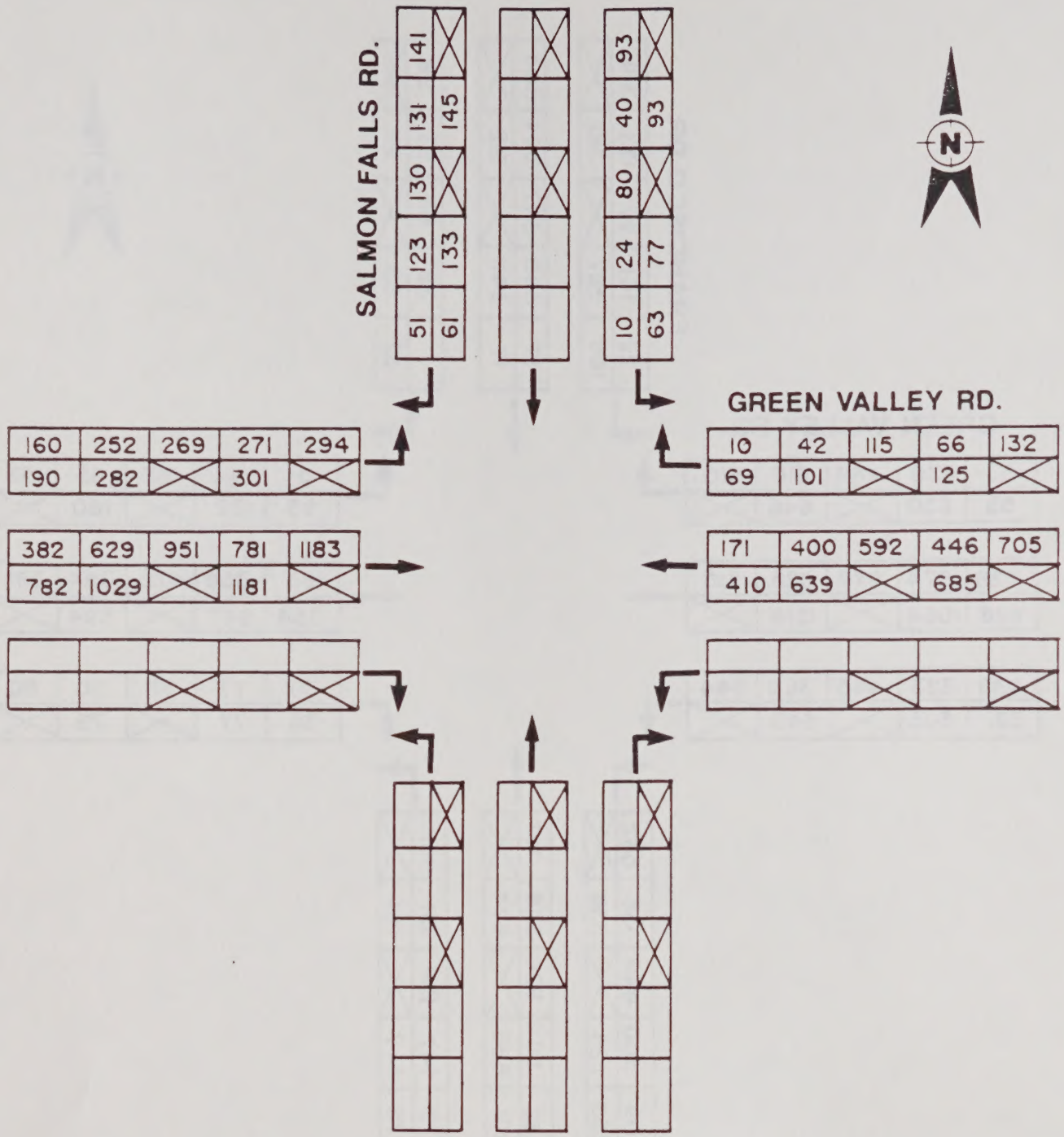


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
FRANCISCO DR. AT GREEN VALLEY RD.

TJKM
TRANSPORTATION CONSULTANTS

FIGURE
E-1

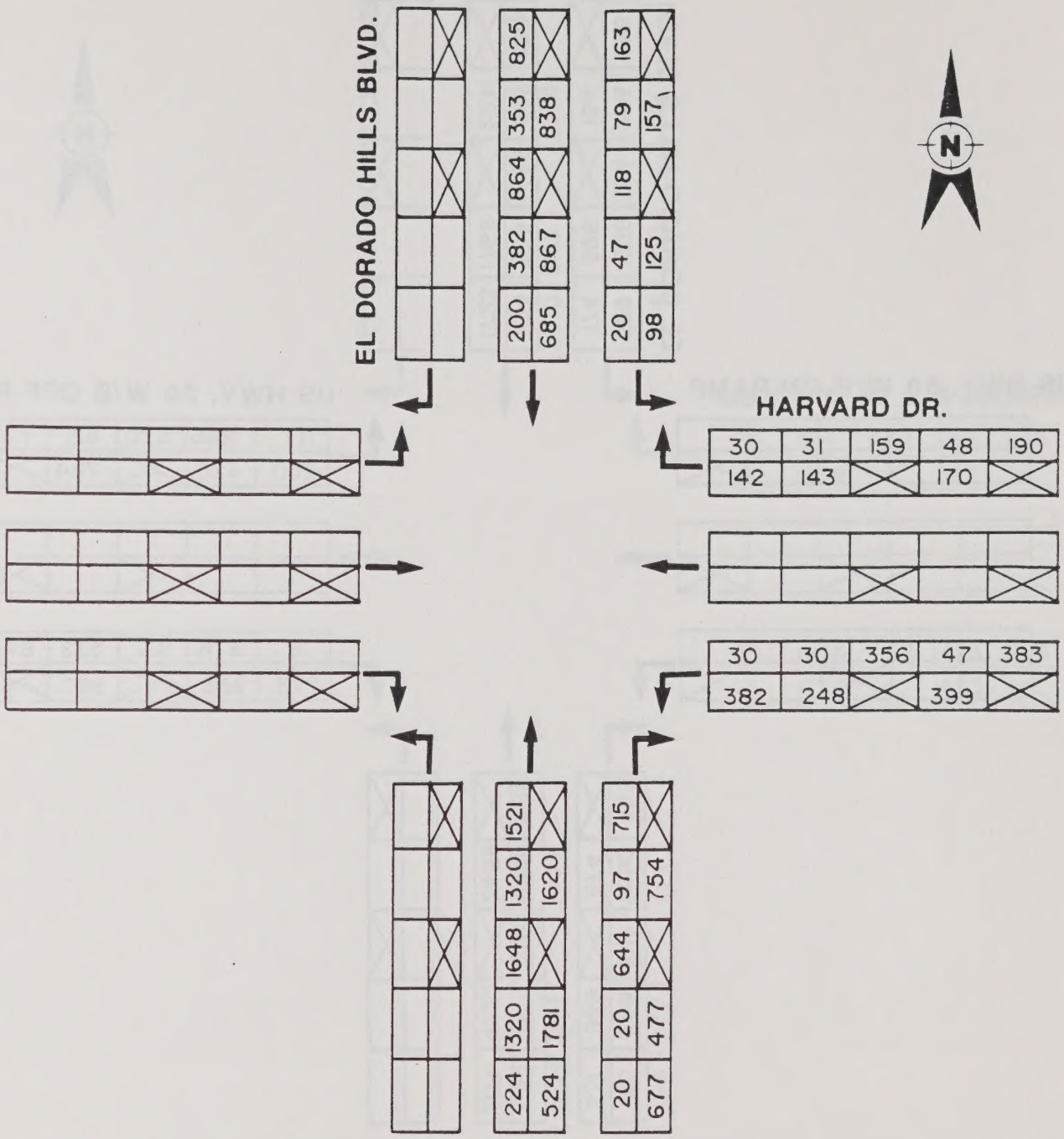


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SALMON FALLS RD. AT GREEN VALLEY RD.

TJKM
TRANSPORTATION CONSULTANTS

FIGURE
E-2

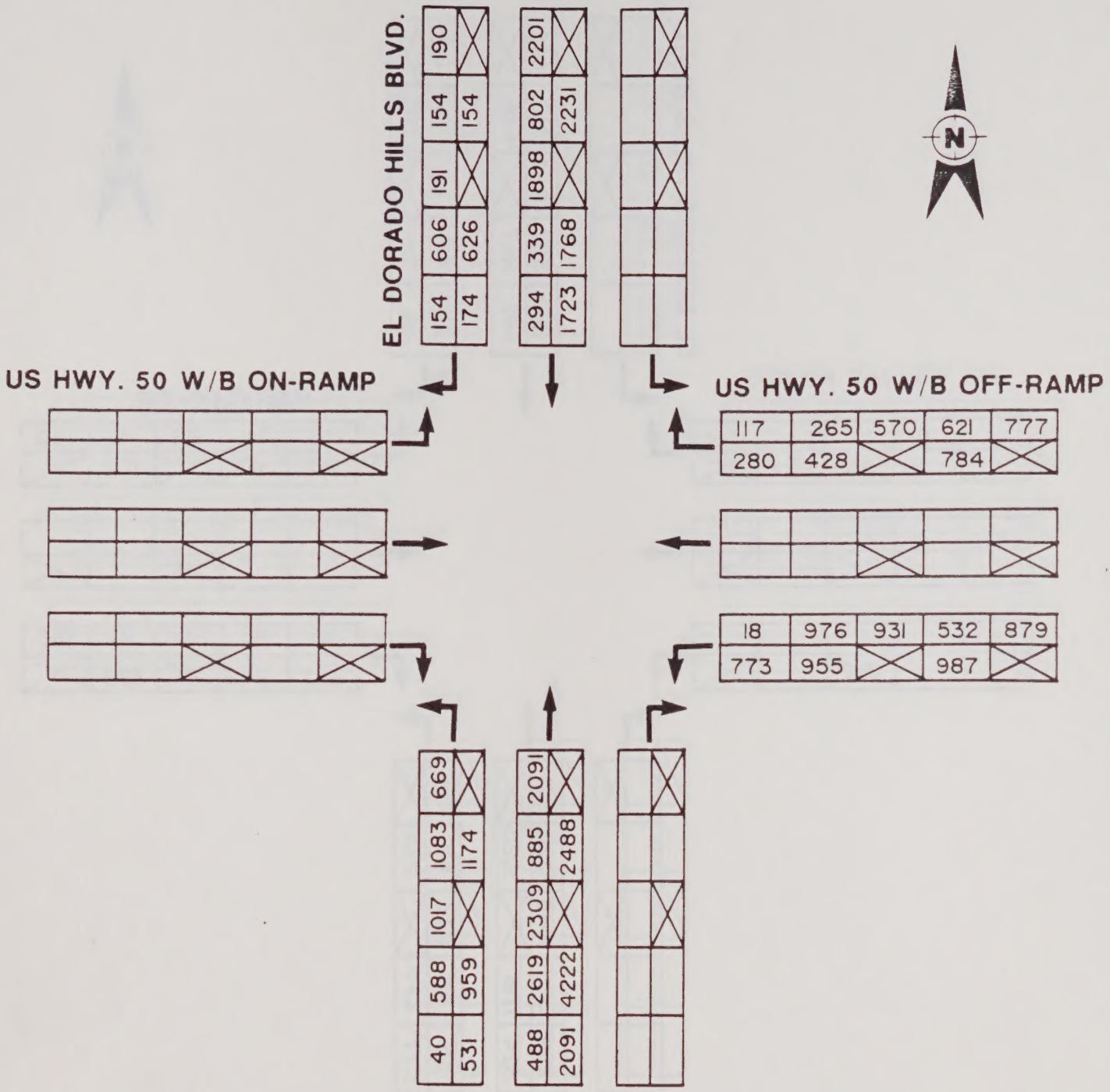


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
EL DORADO HILLS BL. AT HARVARD DR.

JKM TRANSPORTATION CONSULTANTS

FIGURE E-3

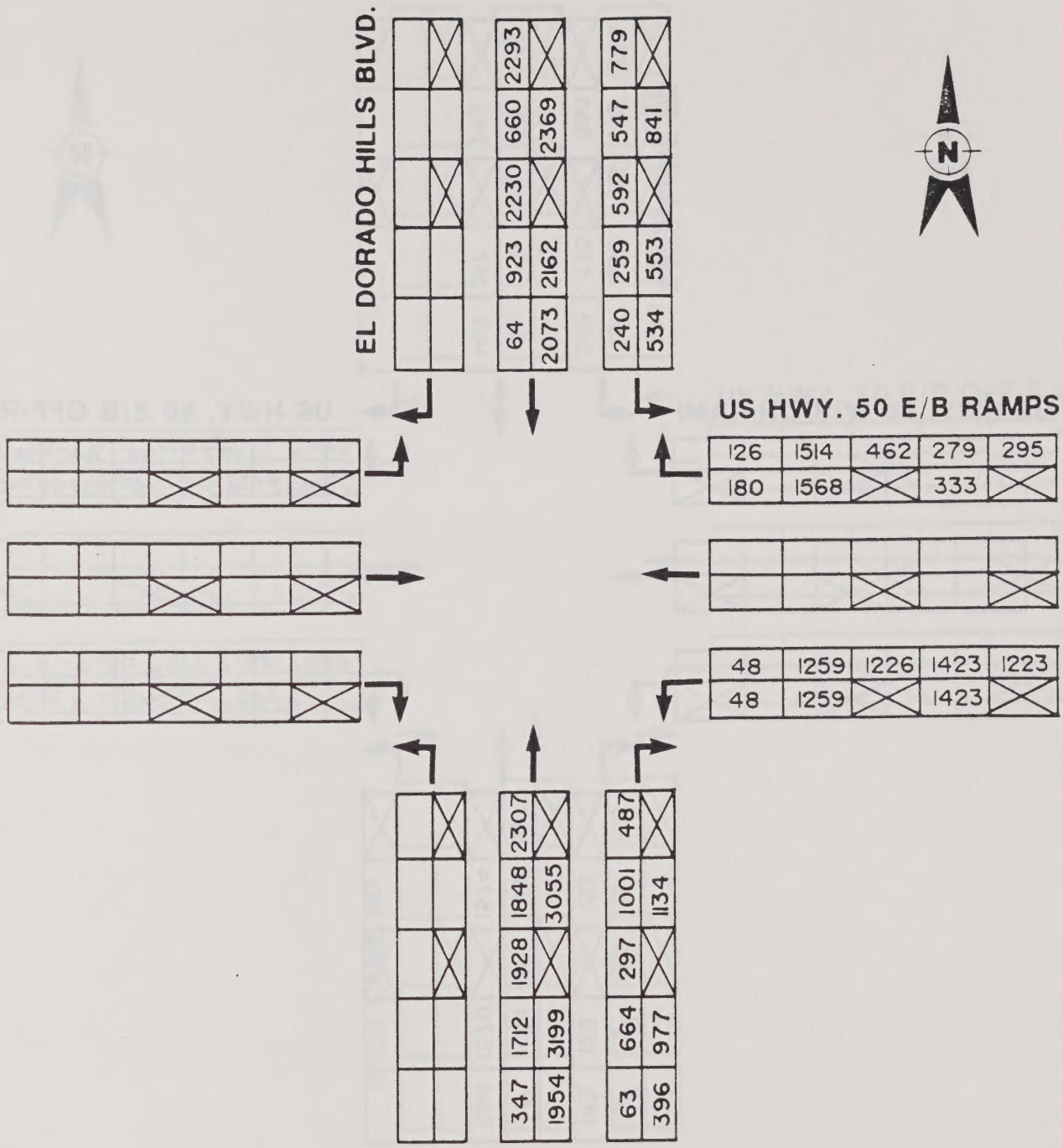


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 W/B RAMPS AT EL DORADO HILLS BLVD.

JKM TRANSPORTATION CONSULTANTS

FIGURE E-4

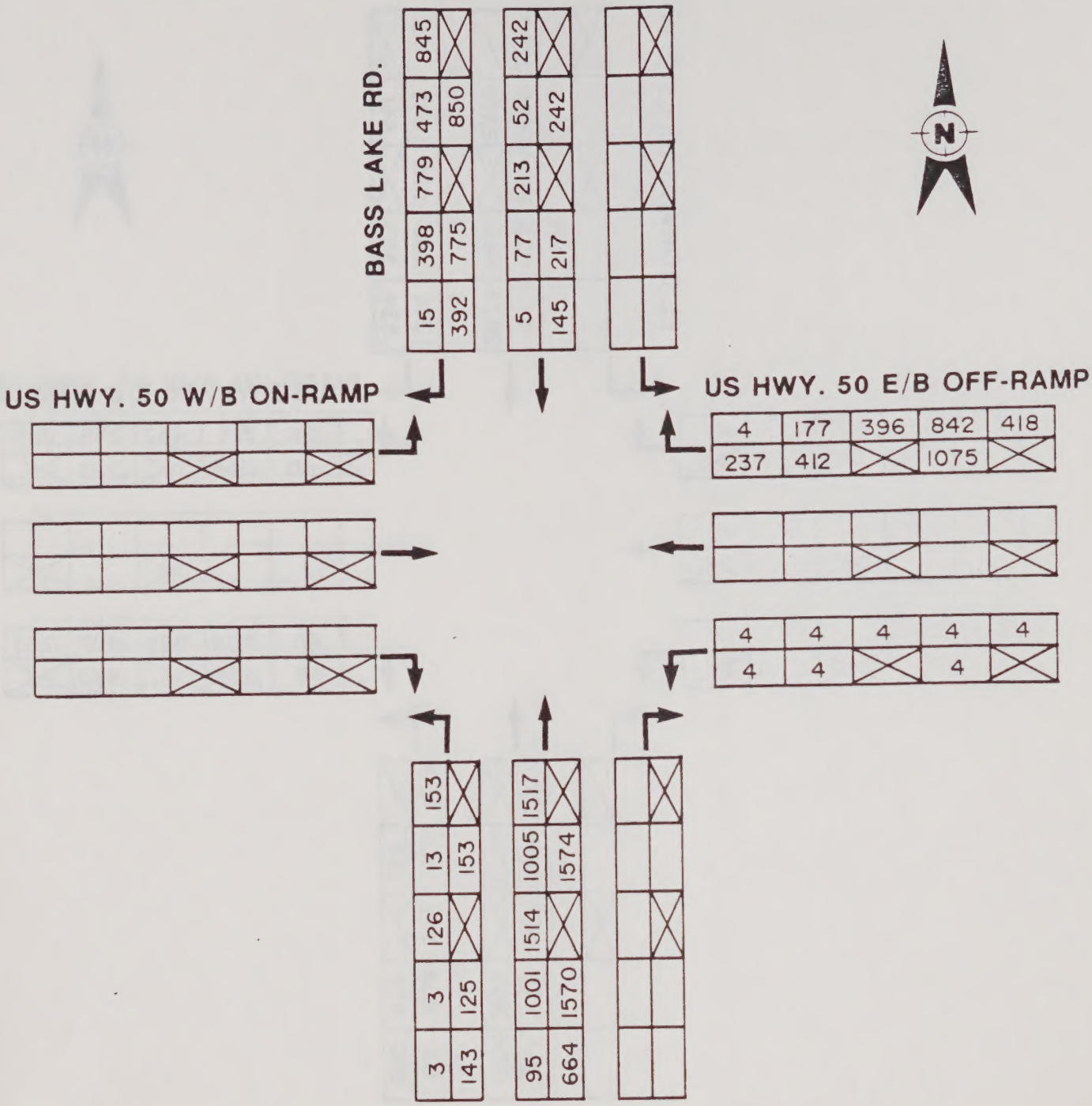


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 E/B RAMPS AT EL DORADO HILLS BLVD.

TJKM
TRANSPORTATION CONSULTANTS

FIGURE
E-5

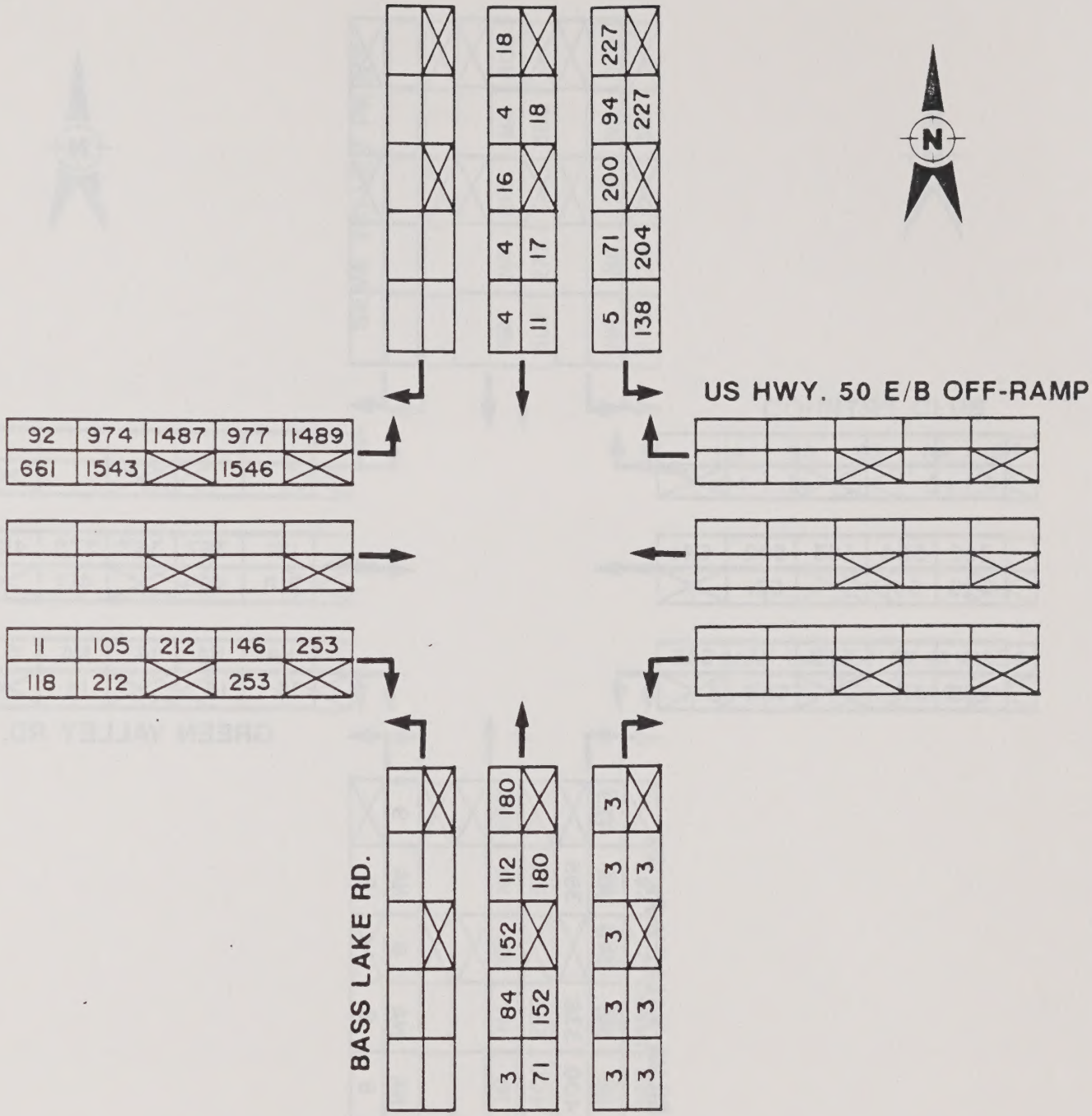


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 W/B RAMPS AT BASS LAKE RD.

TJKM TRANSPORTATION CONSULTANTS

FIGURE E-6

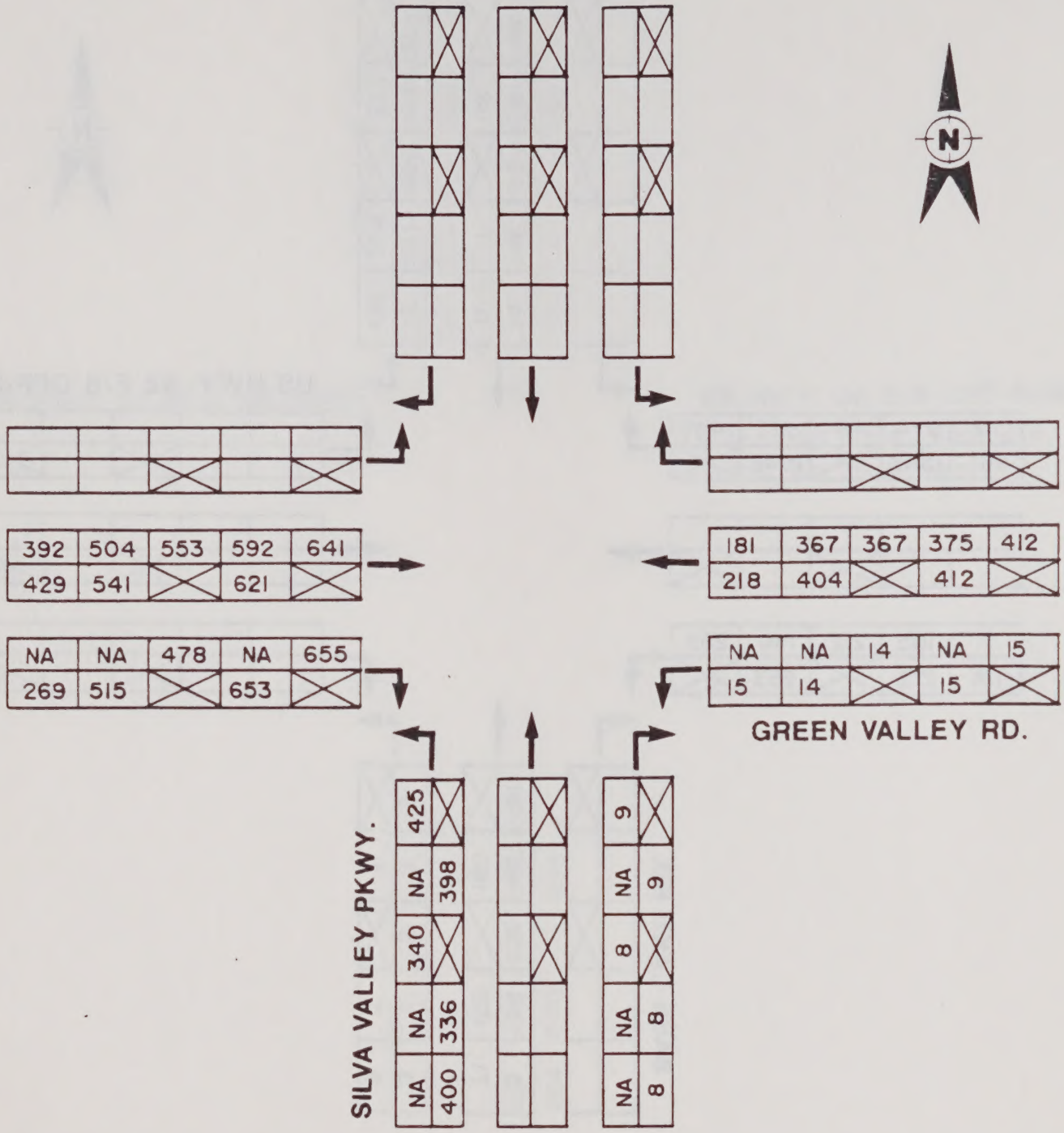


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 E/B RAMPS AT BASS LAKE RD.

JKM TRANSPORTATION CONSULTANTS

FIGURE E-7

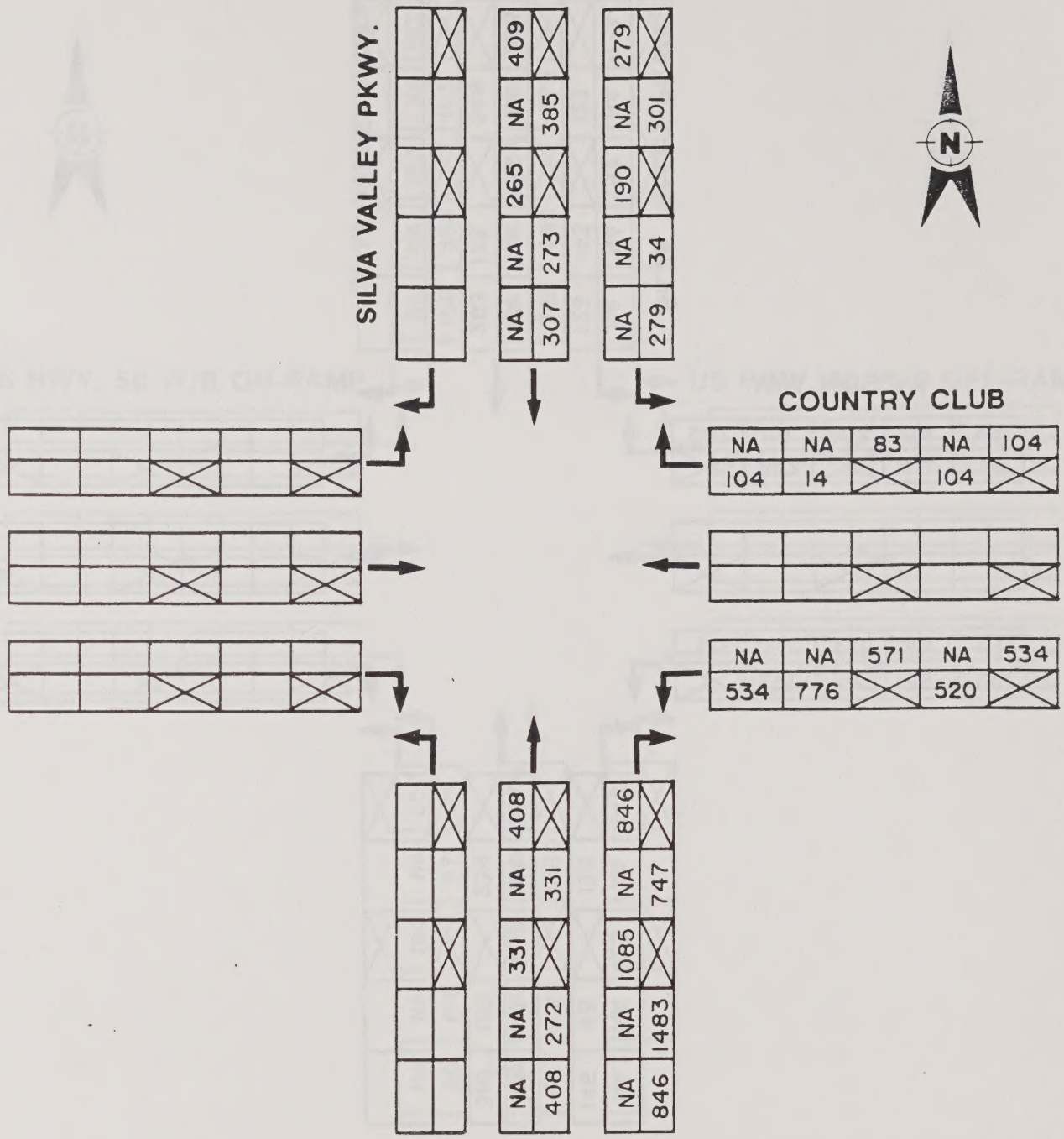


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SILVA VALLEY PKWY. AT GREEEN VALLEY RD.

TJKM TRANSPORTATION CONSULTANTS

FIGURE E-8

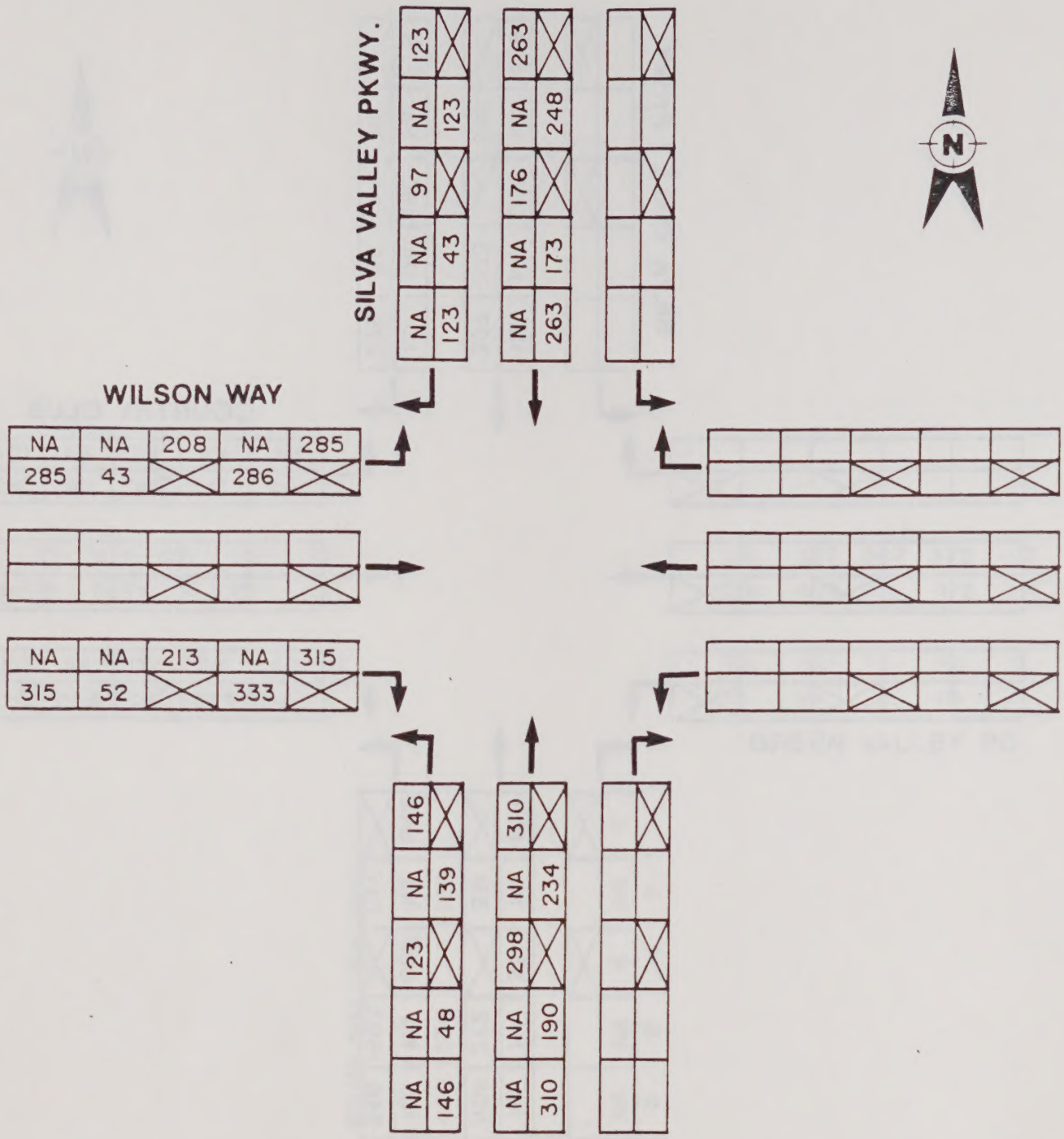


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SILVA VALLEY PKWY. AT COUNTRY CLUB DR. DR.

JKM
TRANSPORTATION CONSULTANTS

FIGURE
E-9

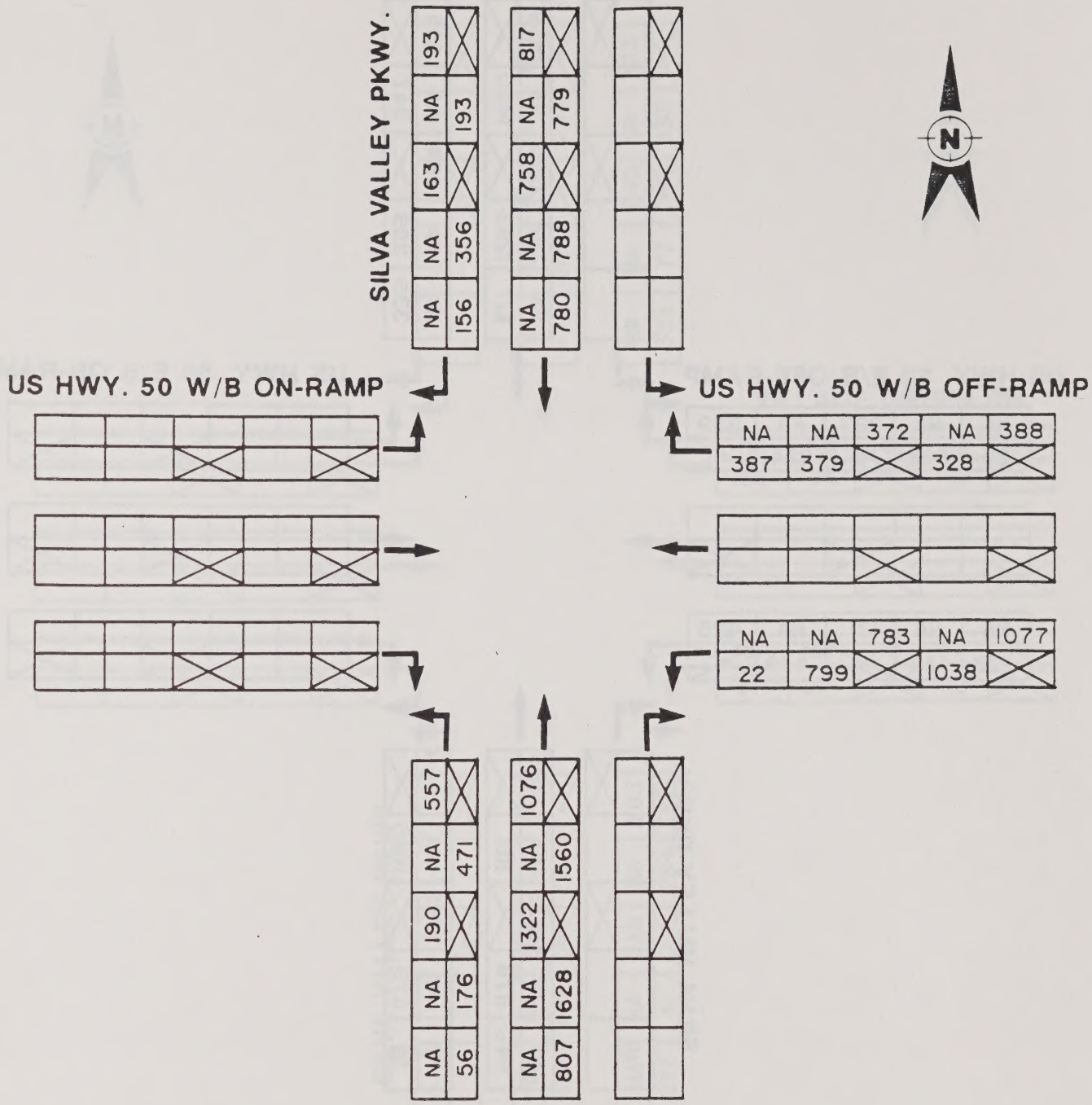


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SILVA VALLEY PKWY. AT WILSON WAY

TKM
TRANSPORTATION CONSULTANTS

FIGURE
E-10

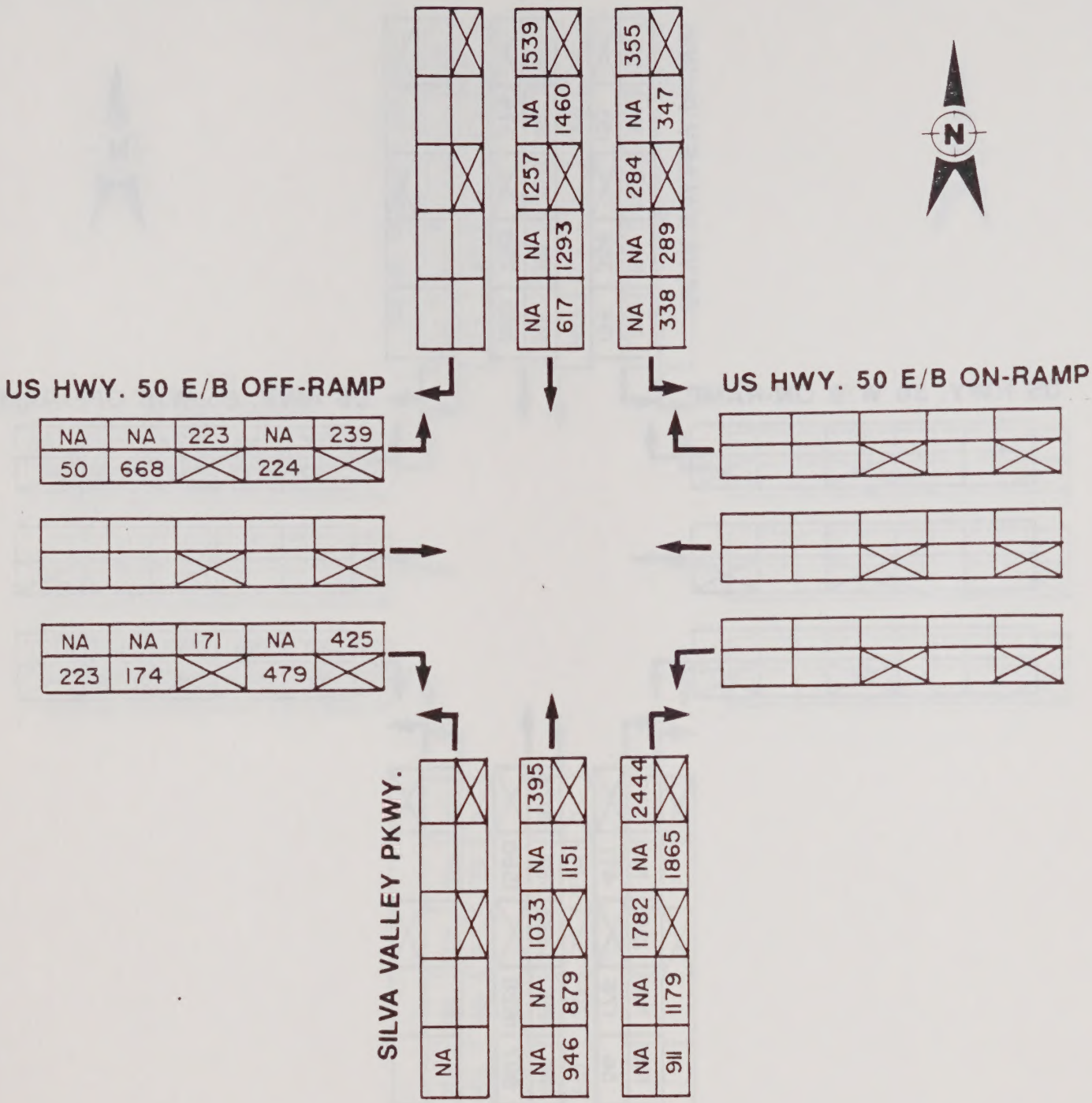


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 W/B RAMPS AT SILVA VALLEY PKWY.

JKM
TRANSPORTATION CONSULTANTS

FIGURE
E-11

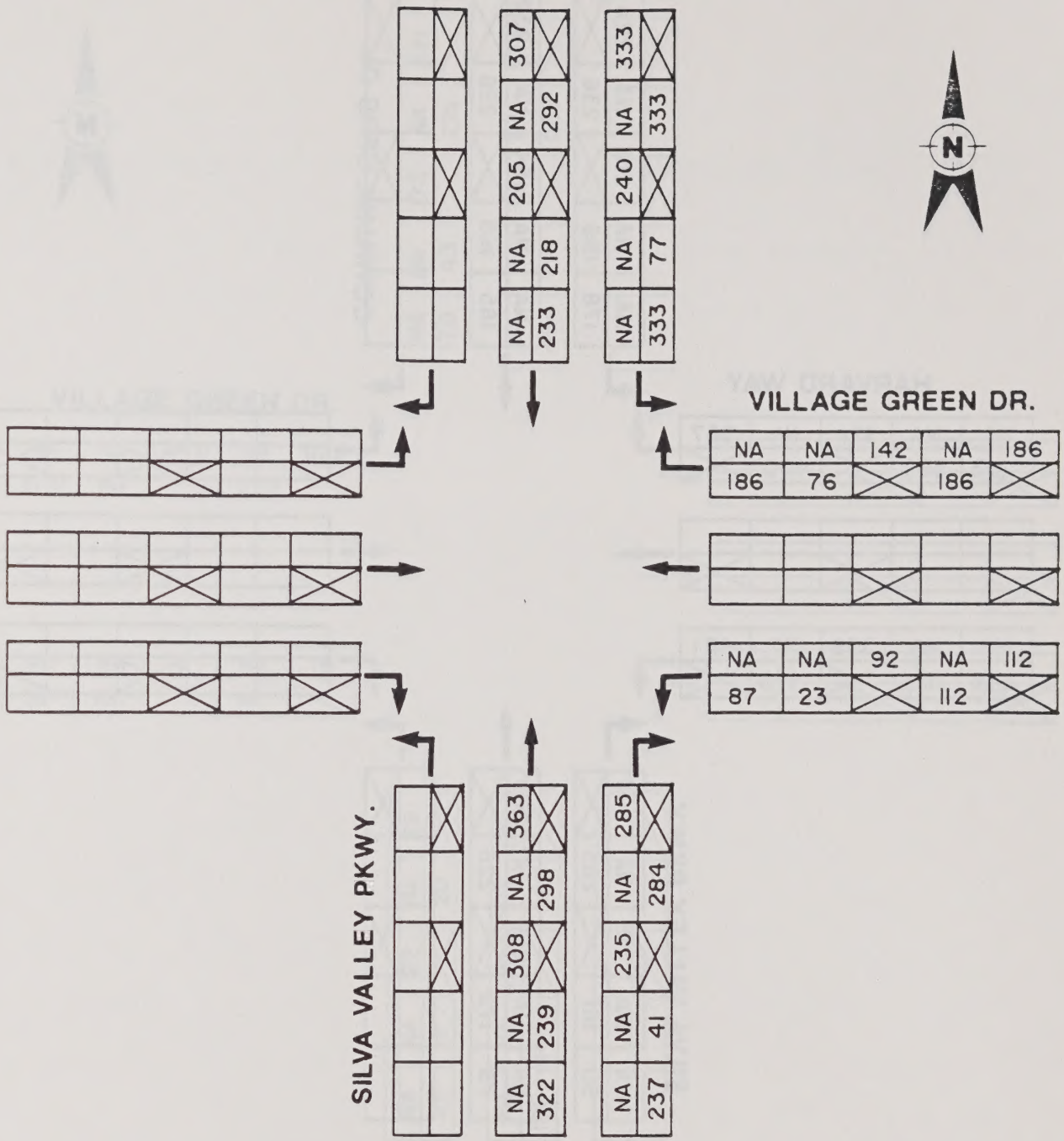


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
US HWY. 50 E/B RAMPS AT SILVA VALLEY PKWY.

TJKM TRANSPORTATION CONSULTANTS

FIGURE E-12

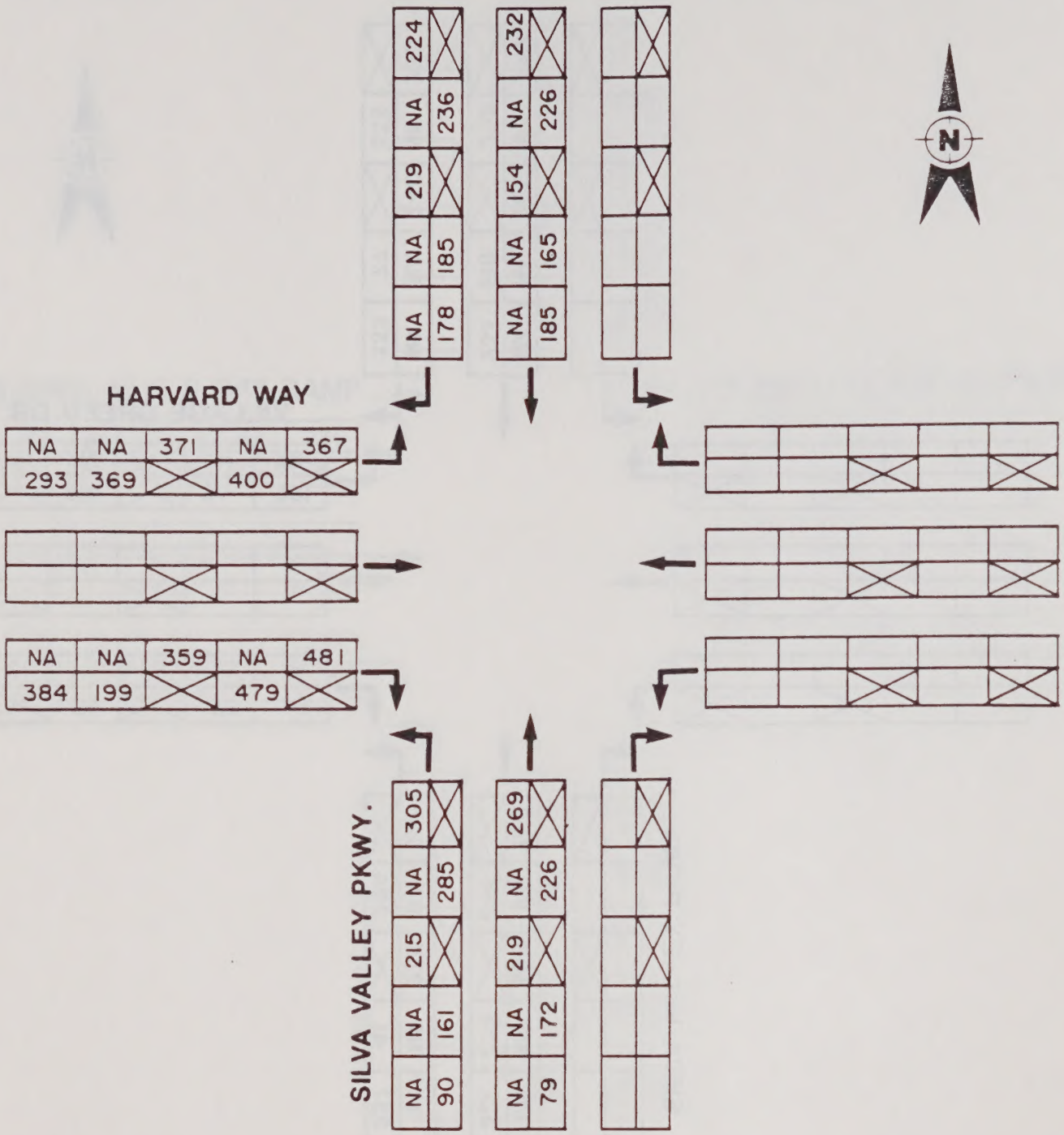


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SILVA VALLEY PKWY. AT VILLAGE GREEN DR.

TJKM TRANSPORTATION CONSULTANTS

FIGURE E-13

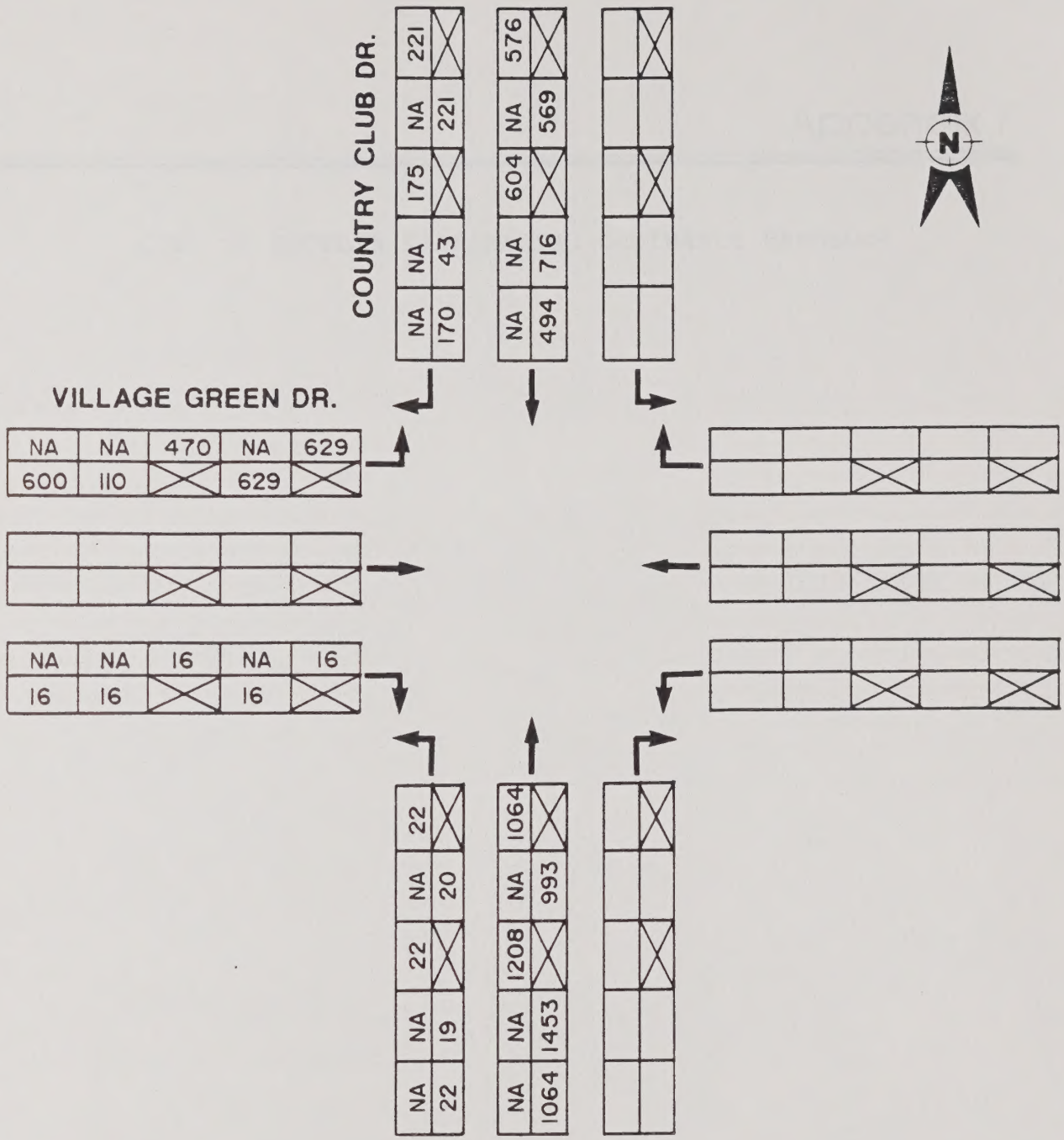


EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
SILVA VALLEY PKWY. AT HARVARD WAY

JKM TRANSPORTATION CONSULTANTS

FIGURE E-14



EXISTING	1997 W/O PROJECT	1997 + PROJECT/ MOD. NETWORK	2010 W/O PROJECT	2010 + PROJECT W/MOD. NETWORK
EXISTING + PROJECT	1997 + PROJECT		2010 + PROJECT	

P.M. PEAK HOUR TURNING VOLUMES
COUNTRY CLUB DR. AT VILLAGE GREEN DR.

JKM TRANSPORTATION CONSULTANTS

FIGURE E-15

Appendix F

CITY OF ROCKLIN RIDESHARING ORDINANCE HANDBOOK

City Of Rocklin
Ridesharing Ordinance Handbook

General Project Requirements
Transportation Plan Guidelines
Reporting and Compliance Requirements

August 1983

CITY OF ROCKLIN

RIDESHARING ORDINANCE HANDBOOK

General Project Requirements

Transportation Plan Guidelines

Reporting and Compliance Requirements

AUGUST 1983

TABLE OF CONTENTS

I. INTRODUCTION

The South Placer area is entering an era of rapid growth. Major companies from all over the country are in the process of locating, or are considering locating, in the plentiful industrial development areas.

It is projected that by the year 2000, employment will have increased from 18,000 jobs in 1980 to over 30,000 jobs. In the same period of time, the population is projected to increase from 87,000 persons to over 200,000 persons.

This great increase in employment and population will bring with it increased vehicle travel and the associated impacts of traffic congestion, air pollution and energy consumption.

The ridesharing ordinance insures that employers will share in the mitigation of impacts of increased growth by establishing ridesharing requirements that will:

- "Reduce total vehicle emissions in the South Placer region by reducing the number of vehicular trips that might otherwise be generated by home-to-work commuting.

- Reduce peak hour traffic circulation in the South Placer region by reducing the number of vehicular trips and the vehicular miles of travel that might otherwise be generated by home-to-work commuting."

The South Placer Transportation Coordinator is responsible for implementing the requirements of the ridesharing ordinance and providing assistance with compliance.

II. GENERAL PROJECT REQUIREMENTS

A. Project Controller and Major Project Controllers

Every project controller (10-49 employees) and major project controller (50+ employees) is to encourage ridesharing for tenants and employees by providing the following incentives to ridesharing:

1. Posting: Post in a conspicuous place or places information materials provided by the Transportation Coordinator to encourage ridesharing. Informational materials may include:

   - Current schedules, rates (including procedures for obtaining transit passes), and routes of mass transit service to the common work location or employment site.

   - The location of all bicycle routes within at least a five-mile radius of the common work location or employment site.

   - Posters or flyers encouraging the use of ridesharing and referrals to sources of information concerning ridesharing.

2. Commuter Matching Service: Disseminate annually to all tenants and employees, and to new tenants and new employees when hired, written information provided by the Transportation Coordinator regarding the Sacramento Rideshare Program. This program is an areawide ridesharing matching service provided by the California Department of Transportation.

B. New Major Project Controllers and Existing Project Controllers or Major Project Controllers that Expand Their Work Force by Twenty Percent

Every new major project controller and any existing project controller or major project controller who expands his work force from base line employment by 20% or more and who after expansion employs fifty (50) or more employees at a common work location is to facilitate the tenants' or employees' use of an areawide ridesharing program by providing:

1. Ridesharing Coordinator (Commute Coordinator): Designate an employee or other appropriate person to serve as a Commute Coordinator. The Commute Coordinator's responsibilities are to include:

   - Publicize the availability of public transportation.

   - Communicate employee or tenant transportation needs to the Transportation Coordinator.

   - Assist employees or tenants in forming carpools or vanpools.

   - Perform a semi-annual employee and/or tenant transportation profile showing the distribution of employees and tenants by transportation mode.

2. Sacramento Rideshare Program: Promote and use the Sacramento Rideshare Program.

3. Parking Facilities: Provide preferential parking facilities for carpools and vanpools, and provide secure parking for bicycles, as follows:

   a. Carpool and Vanpool Parking Facilities: If off-street parking is provided for tenants and/or employees, then guaranteed parking spaces are to be provided for each carpool and vanpool in which the tenants or employees participate. This parking is to have more favorable conditions and terms than that given to parking for single-occupant motor vehicles. In addition, the parking spaces are to be: (1) designated with appropriate signing or pavement markings showing that they are for exclusive carpool or vanpool use; and (2) made available to any carpool or vanpool on request. The Commute Coordinator is to establish a verification plan to limit preferential parking privileges to bonafide carpool and vanpool users.

   b. Bicycle Parking Facilities: Bicycle parking facilities which will accommodate the parking and securing of bicycles are to be made available on request to the employer's rideshare coordinator by bicycle commuters.

III. TRANSPORTATION PLAN

A Transportation Plan is required to be submitted by every applicant for a conditional use permit, zoning change, or tentative map for a new project which would allow a use or number of uses that individually or collectively would employ two hundred (200) or more employees at one common work location, or the expansion of an existing project which would allow a use or uses that individually or collectively, after expansion, may both: (1) generate employment for two hundred (200) or more employees; and (2) increase the total number of employees at the common work location by 20% or more from the applicant's base line employment.

The purpose of the transportation plan is to insure that new or expanding developments mitigate their traffic and air quality impacts by designing a trip reduction program for the particular project that would encourage employees at the site to use ridesharing, transit or bicycling as their primary commute method. The transportation plan is to include the following:

A. A description of the activity and operating characteristics of the proposed project (i.e., business hours and peak hours of traffic generation).

B. An estimate of the commuting characteristics of the tenants and/or employees anticipated at the project site (i.e., travel distance and mode).

C. A transportation program made up of mitigation measures designed to achieve a 30% reduction in the number of vehicle trips that would occur if all home-to-work trips were made in single-occupant vehicles.

In meeting the required 30% trip reduction, applicants will receive credit for mitigation measures specified under the General Project Requirements and may then select from a group of optional mitigation measures to complete the program. The ordinance thus insures that certain basic mitigation measures are established, while allowing the applicant to select other optional measures that would best serve the employees of the particular project.

The Transportation Coordinator is available to project applicants to assist with the development of the Transportation Plan. The plan should also include proposed methods of administering and managing the trip reduction program.

1. Trip Reduction Credits for Required Mitigation Measures

- Posting of Ridesharing Information (Section II, A-1)

  Trip Reduction Credit: 5%

- Commuter Matching Service (Section II, A-2)

  Trip Reduction Credit: 5%

- Transportation (Commute) Coordinator (Section II, B-1)

  Trip Reduction Credit: 5%

2. Trip Reduction Credits for Optional Mitigation Measures (See III, C-3, for description of measures.)

- In-House Carpool Matching Service

  Trip Reduction Credit: 5%

- Vanpool Program

  Trip Reduction Credit:

  5% of total employees = 5%

- Shuttle Bus/Buspool Subsidy

  Trip Reduction Credit:

  5% of total employees = 5%

- Transit Pass Subsidy

  Trip Reduction Credit:

  5% of total employees = 2.5%

- Transit Shelter

  Trip Reduction Credit: 2.5%

- Preferential Carpool/Vanpool Parking

  Trip Reduction Credit: 3%

- Secure Bicycle Parking Facilities

  Trip Reduction Credit: 2%

- Showers and Lockers

  Trip Reduction Credit:

  Two showers and 20 lockers per 500 employees = 2%

- Parking Fee

  Trip Reduction Credit ($10 Fee): 3%

- Variable Work Hours

  Trip Reduction Credit: 3%

- Any Other Program the Applicant May Desire

  Trip Reduction Credit to be negotiated.

3. Description of Mitigation Measures

- Posting of Ridesharing Information

Posters are available from the Transportation Coordinator to promote the use of ridesharing and to hold a supply of brochures entitled "South Placer Transportation Guide". The Guide contains all the ridesharing information mandated by the ordinance to be posted by employers. The employer is required to place the poster(s) in a conspicuous location for use by employees and to inform the Transportation Coordinator when a new supply of Guides is needed.

- Commuter Matching Service

The California Department of Transportation (CALTRANS) provides an areawide ridesharing matching service entitled "Sacramento Rideshare". This service makes use of a sophisticated computer program to provide carpool match lists to persons who make application. The expanded data base produces names of commuters interested in carpooling from nearby employers as well as within the employee's own company. Sacramento Rideshare provides the applications to employers to distribute to their employees and then directly mails the match lists to employees making this request. There is no charge for this matching service.

- Transportation (Commute) Coordinator

The Commute Coordinator is a staff person designated by management to administer a transportation program within the company. The Commute Coordinator will be assisted by the Transportation Coordinator in designing a program and implementing policies and services. The Transportation Coordinator provides informational and promotional materials free of charge to the Commute Coordinator.

- In-House Carpool Matching Service

The Commute Coordinator conducts a survey of all employees in order to identify persons interested in being matched into carpools. Potential carpoolers are then matched by addresses and work shifts using a manual method, or in the case of large companies, by computer program.

- Vanpool Program

If this mitigation measure is selected, the applicant is required to extend a continuously outstanding offer to acquire a van or vans (by purchase, lease or otherwise), to obtain insurance and to make available to any group of at least eight employees a van for their use in a vanpool. However, full or partial operating costs of the van may be recovered from the vanpool participants. State and federal tax deductions are also available to the employer for van leasing and purchasing. Sacramento Rideshare will assist in selecting the appropriate vanpool arrangement and determining and identifying potential vanpool participants.

- Shuttle Bus/Buspool Subsidy

Under this option, the applicant is required to provide at least one shuttle bus or buspool to transport workers of the project from their residence or other staging area to the project site during the mornings and afternoon commute periods. Economic viability will depend on most of the costs being recovered from commuters through imposition of a users fee. Buspools and shuttle buses usually operate from medium to long commute distances.

Within this concept there are several variations: a charter/leased bus sponsored by the employer (or group of employers), or sponsorship by a local jurisdiction. The Transportation Coordinator and Sacramento Rideshare will provide assistance in exploring the feasibility of a buspool or shuttle bus and service options..

- Transit Pass Subsidy

Under this measure, the applicant agrees to purchase transit passes for all employees who make this request and provide them either free of charge or at a reduced rate. However, the project must be located within 1/4-mile, or four blocks, of an existing or designated bus route in order for the applicant to qualify to choose this measure. The designated in-house commute coordinator could be responsible for distribution of the passes and collection of fees.

- Transit Shelter

The applicant would agree to be responsible for either constructing a shelter to the standards and specifications provided by the transit company, or would contract with the transit agency to construct the shelter. The number of shelters constructed for which credit would be allowed would depend on the probable number of employees at the worksite. Maintenance of the shelter(s) would be the responsibility of the development owner and could be contracted out. Again, the project would have to be located within 1/4-mile or four blocks of an existing or designated bus route in order for the applicant to qualify to choose this measure.

- Preferential Employee Carpool/Vanpool Parking

Although the ordinance specifies that preferential parking must be provided to each car or van pool requesting such space, this optional mitigation measure requires that preferential parking spaces be provided at the time of development of the parking facilities and comprise at least 10% of the total parking spaces. The parking spaces must be in the most desirable location in the parking lot (i.e., close to the building entrance, in a covered or shaded area, and identified with striping or signs). This should provide an immediate visual incentive to ridesharing. The spaces can be allocated to each pool as they form. The commute coordinator would be in charge of allocating the spaces and monitoring their use.

- Secure Bicycle Parking Facilities for Bicyclists

The ordinance requires that secure bicycle parking be provided for every bicycle commuter requesting this facility. However, trip reduction credit is allowed for applicants that provide secure bicycle parking for at least 5% of the anticipated employment prior to building occupancy. Again, this would visually demonstrate the employer's support of bicycling as a commute mode. Secure bicycle parking is defined as either an enclosed locker structure or an open rack which secures the frame and both wheels of the bicycle.

- Showers and Lockers

The provision of showers and lockers encourage bicycle commuting to work. Two showers, one men's and one women's, should be provided by employers of under 500 persons. For facilities employing 500 or more persons, this amount should be increased by two showers for every 500 employees up to 5,000 employees. A minimum of 10 lockers should be supplied for each shower.

- Parking Fees

The applicant agrees to impose a parking fee on employees whose primary commute method is a single-occupant automobile. No parking fee should be charged to carpool or vanpool users or bicycle or motorcycle riders. A portion of these fees can be used to provide cash incentives and prizes to commute options users through monthly drawings.

- Variable Work Hours

The applicant agrees to allow employees to shift their work schedules from the peak hours (7:30 a.m. - 8:30 a.m.; 4:30 p.m. - 5:30 p.m.) to the non-peak hours in order to avoid traffic congestion, meet ridesharing opportunities, or for personal reasons.

IV. REVIEW AND EVALUATION OF THE TRANSPORTATION PLAN

A. Approval of the Transportation Plan

The Transportation Plan is to be submitted with the project application and is referred to the Transportation Coordinator for review and evaluation of the proposed mitigation measures and for recommendation to the Planning Commission or the City Council. The Planning Commission or City Council then reviews and evaluates the Transportation Plan and approves and/or modifies, and approves or disapproves the Transportation Plan as part of the review and approval process for the application under submission. No project application that is subject to the provisions of this ordinance will be approved without approval of the Transportation Plan.

B. Transportation Plan as a Condition of Approval

Compliance with the approved Transportation Plan is included as a condition of approval for the applicant and may be included as a term of development agreement between the City and the project applicant (see Ridesharing Ordinance, Appendix A). This agreement will run with the land and bind all successors in interest of the applicant.

C. Reduced Parking Space Allowance

Parking space requirements for tenant or employee parking may be reduced below the prevailing parking standard for projects that submit a Transportation Plan. A percentage of the total number of spaces required may be reduced by the equivalent of the percentage of trip reduction that is to be achieved by the program specified in the Transportation Plan. In no case shall parking spaces allowed exceed the prevailing parking standards.

1. Legal Assurance Against Failure

When found necessary, a performance bond or a covenant to run with the title of the land would be a part of the site development requirement. This legal guarantee would specify that enough land to accommodate the reduction in parking spaces be set aside and held in reserve for a period of four years. After four years, if the Transportation Plan has achieved the anticipated reduction in vehicle trips, the land would be released from the set aside.

2. Monitoring System

The Transportation Coordinator will compute actual achievement in reduction of vehicle trips annually. In the case of failure to meet the required reduction in vehicle trips, the use of the reserved land may be invoked or other actions as are necessary to offset the degree of failure.

3. On-Street Parking Restrictions

On-street parking adjacent to the project will be restricted to facilitate the parking space reduction measure if it is deemed necessary or if adverse impacts on adjacent land uses are taking place.

V. REPORTING REQUIREMENTS

Each applicant preparing a Transportation Plan, and each successor in interest of the applicant that is obligated to carry out the Transportation Plan, must submit a report to the Transportation Coordinator by March 1. This report is to describe the transportation program and contain at a minimum the following information:

A. Description. A description of the measures taken to comply with the ordinance, including an accounting of the resources expended on ride-share promotion activities.

B. Use. The average number of tenants and/or employees regularly arriving at and leaving the project site for the reporting period by each of the following methods of transportation:

1. Single passenger motor vehicles (including mopeds).
2. Carpools.
3. Van-type vehicles with eight or more commuters.
4. Mass transit.
5. Bicycles.
6. All others.

C. Numbers. The total number of tenants and/or employees at the project site is to be included in the report, along with the number of employees per workshift.

VI. COMPLIANCE WITH REQUIREMENTS

A. Compliance with General Project Requirements

The Transportation Coordinator will periodically review compliance with the general requirements by on-site checks at the common work location or employment site. In the event of non-compliance, the Transportation Coordinator is to report to the City Planning Director, who will then review the Transportation Coordinator's report. If the Planning Director determines that the project controller or major project controller is in non-compliance with the general project requirements, a letter will be issued specifying the points of non-compliance.

B. Compliance with Transportation Plan

The Planning Director, with the assistance of the Transportation Coordinator, will monitor the implementation of transportation plans. Monitoring will occur through the reporting procedure previously described, as well as periodic on-site checks at the facility, and on annual review of compliance with the Transportation Plan.

If the Planning Director determines there is non-compliance with the requirements of the Transportation Plan, a letter will be issued specifying the points of non-compliance.

C. Effect of Receipt of a Letter of Non-Compliance

Upon receipt of a letter of non-compliance, the project controller or the major project controller, the applicant, and all successors in interest of the applicant obligated to carry out the transportation plan are to comply with the provisions as set forth in the letter of non-compliance, unless an appeal is filed.

D. Penalty

In the event of failure to comply with the requirements of the ordinance or the terms of a transportation plan, the City may impose the following penalties:

1. Any penalty which may be imposed under the Zoning Code.

2. Any penalty as set forth in the Transportation Plan Agreement, if any.

E. Enforcement

The provisions of the ordinance will be administered and enforced by the City of Rocklin Planning Department.

APPENDIX A

ORDINANCE NO. 475

AN ORDINANCE AMENDING ORDINANCE NO. 336, THE ZONING CODE, TO ESTABLISH AND IMPLEMENT RIDESHARING PROGRAMS IN THE CITY OF ROCKLIN

The City Council of the City of Rocklin does ordain as follows:

Section 1. Ordinance No. 336, the Zoning Code, is hereby amended to add the following:

Chapter 13
RIDESHARING PROGRAM

ARTICLE 1: PURPOSE

Section 13.01.000 The Rocklin ridesharing program is hereby established. The purpose and intent of the ridesharing program is to:

A. Reduce total vehicle emissions in the South Placer region by reducing the number of vehicular trips that might otherwise be generated by home-to-work commuting.

B. Reduce peak hour traffic circulation in the South Placer region by reducing both the number of vehicular trips and the vehicular miles of travel that might otherwise be generated by home-to-work commuting.

ARTICLE 2: OBJECTIVE

Section 13.02.010 The fundamental objective of the ridesharing program as established by this chapter is to reduce the average number of vehicular trips for home-to-work commuting to 25% fewer trips than would occur if all such trips were made in single occupant motor vehicles. Large employment facilities will be expected to accomplish a higher percentage of

this reduction than small employment centers in recognition of the greater opportunity for rideshare matches at large employment facilities.

ARTICLE 3: DEVELOPMENT STANDARDS

Section 13.03.000 No section or provision of this chapter shall preclude application of any other development standards, requirements, or conditions of approval that may be imposed in the project review and approval procedures of the City.

ARTICLE 4: DEFINITIONS:

Section 13.04.000 APPLICANT. An applicant for a conditional use permit, zoning change, or tentative subdivision map for (1) a new project that will allow a use or uses which, individually or collectively, may generate employment for two hundred (200) or more employees at a common work location or (2) the expansion of an existing project for a use or uses which, individually or collectively, after expansion, may both (a) generate employment for two hundred (200) or more employees and (b) increase the total number of employees at a common work location by 20% or more from the applicant's baseline employment.

Section 13.04.005 BASELINE EMPLOYMENT. The average number of employees employed at a common work location for the twelve (12) month period ending on the effective date of this ordinance as determined by the Transportation Coordinator.

Section 13.04.010 CARPOOL. A motor vehicle occupied by two or more persons travelling together.

Section 13.04.015 COMMON WORK LOCATION. Either a single building or a group of buildings or work locations at a common site.

Section 13.04.020 COMMUTER. An employee who travels regularly to and from a facility.

Section 13.04.025 COMMUTER MATCHING SERVICE. Any system for mapping and matching home and work locations of interested commuters to identify prospects for ridesharing.

Section 13.04.030 MAJOR PROJECT CONTROLLER. The lessor of a common work location whose tenants, individually or collectively, employ fifty (50) or more employees, or an employer who employs fifty (50) or more employees.

Section 13.04.035 PEAK HOUR COMMUTER. Any employee who travels regularly to and from a facility three or more days a week and arrives at or departs from the facility during the morning hours of 7:30 a.m. to 8:30 a.m. or the evening hours of 4:30 p.m. to 5:30 p.m.

Section 13.04.040 PROJECT CONTROLLER. The lessor of a common work location whose tenants, individually or collectively, employ ten (10) or more but less than fifty (50) employees, or an employer who employs ten (10) or more but less than fifty (50) employees.

Section 13.04.045 RIDESHARER. Any employee who commutes to and from his or her work location by any mode other than single occupancy light or medium-duty vehicle, motorcycle or moped.

Section 13.04.050 SACRAMENTO RIDESHARE PROGRAM. The commuter matching service and commuter information service operated by the CALTRANS-Sacramento Ridesharing Project.

Section 13.04.055 SHIFT OF EMPLOYMENT. Any group of employees who work at a common work location and who arrive and depart from work in a common time interval not greater than one hour.

Section 13.04.060 SOUTH PLACER TRANSPORTATION COORDINATOR or TRANSPORTATION COORDINATOR. The coordinator of transportation information and Transportation Plans, as established by the Coordination Agreement for the South Placer Task Force

Relating to Highway 65, a joint powers agreement entered into by the County of Placer and the Cities of Roseville, Rocklin, and Lincoln, as it now exists and as it may hereafter be amended.

Section 13.04.065 TRANSPORTATION PLAN. The plan submitted by an applicant and approved by the City pursuant to Article 6 of this chapter (Section 13.06.000 et seq.).

ARTICLE 5: GENERAL PROJECT REQUIREMENTS

Section 13.05.000 Every project controller and major project controller shall encourage ridesharing for tenants and employees by providing the following incentives to ridesharing:

A. POSTING: Posting in a conspicuous place or places information materials provided by the Transportation Coordinator to encourage ridesharing. Informational materials may include:

1. Current schedules, rates (including procedures for obtaining transit passes), and routes of mass transit service to the common work location or employment site.

2. The location of all bicycle routes within at least a five-mile radius of the common work location or employment site.

3. Posters or flyers encouraging the use of ridesharing and referrals to sources of information concerning ridesharing.

B. COMMUTER MATCHING SERVICE. Disseminating annually to all tenants and employees, and to new tenants and to new employees when hired, written information provided by

the Transportation Coordinator regarding an areawide commuter ridesharing matching service.

Section 13.05.010 FACILITATION. Every new major project controller and every existing project controller and major project controller who expands the number of employees at a common work location by 20% or more from his baseline employment and who, after expansion, employs 50 or more employees at a common work location, shall facilitate the tenants' or employees' use of an areawide ride-sharing program by:

1. Ridesharing Coordinator, Designating an employee or other appropriate person to serve as a ridesharing coordinator. The ridesharing coordinator's responsibilities shall include:

   a. Publicizing the availability of public transportation.

   b. Communicating employee or tenant transportation needs to the Transportation Coordinator.

   c. Assisting employees or tenants in forming carpools or vanpools.

   d. Performing a semi-annual employee and tenant transportation profile showing the distribution of employees and tenants by transportation mode.

2. Sacramento Rideshare Program. Using the Sacramento Rideshare Program, or creating an equivalent independent matching service.

3. Parking Facilities. Establish preferential parking facilities for carpools and vanpools, and provide parking for bicycles as follows:

a. PREFERENTIAL PARKING. If a major project controller provides or subsidizes off-street parking facilities or spaces to any employee or tenant the parking of motor vehicles used primarily for commuting between place of residence and the common work location or employment site, such major project controller shall provide guaranteed parking spaces for each carpool and vanpool in which its tenants or its employees participate, under more favorable terms and conditions than are afforded to parking of single occupant motor vehicles. Parking spaces assigned to exclusive carpool or vanpool use shall be so designated with appropriate signing or pavement markings. Such parking shall be made available on request of any carpool or vanpool to the major project controller's ridesharing coordinator.

b. BICYCLE PARKING FACILITIES. Bicycle parking facilities which will accommodate the parking and securing of bicycles shall be made available at the request of any tenant or employee whose primary mode of commuting is by bicycle, made to the major project controller's ridesharing coordinator.

Section 13.05.030 EFFECTIVE DATE OF ARTICLE; APPLICABILITY. Notwithstanding the provisions of Chapter 8 of this Ordinance (Section 8.01.000 et seq.), all existing project controllers and major project controllers within the City of Rocklin shall comply with the provisions of this Article 5 immediately upon the effective date of this ordinance. The provisions of this Article 5 shall also

apply to all future project and major project controllers, including those subject to Article 6, below.

ARTICLE 6: TRANSPORTATION PLANS

Section 13.06.000 APPLICABILITY. This article shall apply to every applicant for a conditional use permit, zoning change or tentative map for:

A. A new project that will allow a use or number of uses that, individually or collectively, may generate employment for two hundred (200) or more employees at a common work location, or

B. the expansion of an existing project for a use or number of uses which, individually or collectively, after expansion, may both (1) generate employment for two hundred (200) or more employees and (2) increase the total number of employees at the common work location by 20% or more from the applicant's base line employment.

Section 13.06.010 REQUIREMENT. The applicant shall submit, along with any other required information, a Transportation Plan for the project. The Transportation Plan shall include the following:

A. DESCRIPTION. A description of the activity and operating characteristics of the proposed project (e.g., business hours and peak hours of traffic generation).

B. ESTIMATE. An estimate of the commuting characteristics of the tenants and/or employees anticipated at the project site (e.g., travel distance and mode).

C. MITIGATION MEASURES. Mitigation measures designed to achieve a reduction in the number of vehicle trips that would occur if all home-to-work trips by the anticipated tenants or employees were made in single occupant vehicles. The applicant shall design a program to achieve a 30% reduction in vehicle trips. Such mitigation measures shall be selected by the applicant and may include, but are not limited to, the following:

1. Payment of subsidies or provision of other incentives to carpoolers or vanpoolers.

2. Payment of parking charges or absorption of vanpool operation expense for ridesharers.

3. Payment of subsidies or provision of incentives for the use of transit or transportation by other than single occupant motor vehicles.

4. Provision of amenities, such as bicycle lockers, transit shelters, shuttle buses, etc., designed to enhance the use of other than single occupancy motor vehicles.

5. An adequate number of shower and personal locker facilities for regular bicycle commuters.

6. A vanpool program consisting of a continuously outstanding offer to acquire a van or vans (by purchase, lease, or otherwise), to obtain insurance and to make available to any group of at least eight employees a van for their use in a vanpool.

7. Provisions for shifting of vehicle trips from the peak hour to the non-peak hours. A reduction in

vehicle trips per day shall be permitted and calculated in the following manner:

(a) The number of trips taken out of the peak hour, divided by the estimated total trips x 25% would equal the percent reduction of vehicle trips per day credited.

8. Any other program the applicant may devise.

Section 13.06.040 REVIEW AND EVALUATION. The Transportation Plan shall be referred to the Transportation Coordinator for review and evaluation of the proposed mitigation measures and for recommendation to the Planning Commission or the City Council.

Section 13.06.050 APPROVAL BY CITY. The Planning Commission or City Council, as the case may be, shall review and evaluate the Transportation Plan and shall approve, modify and approve, or disapprove the Transportation Plan as part of the review and approval process for the application under submission. No project application subject to the provisions of this article shall be approved without approval of the Transportation Plan. A Transportation Plan shall not be approved unless it is found to meet the trip reduction objectives established in Section 13.06.010(c).

Section 13.06.060 TRANSPORTATION PLAN AGREEMENT. As a condition of approval of the project, the City may require the applicant to enter into a written agreement with the City obligating the appplicant to comply with the Transportation Plan. Such agreement shall be made to run with the land and bind all successors in interest of the applicant and shall constitute an equitable servitude on the property. Where appropriate, the City may require

the agreement to include a provision for a penalty, in the event of breach by the applicant or a successor in interest, and, where the applicant is required to construct physical improvements on the project site, to include a provision for improvement security for said construction in a form approved by the City Attorney.

Section 13.06.070 TRANSPORTATION PLAN AS CONDITION OF APPROVAL. Compliance with the approved Transportation Plan shall be included as a condition of approval for the application under consideration, and may be included as a term of a development agreement between the City and the project applicant.

Section 13.06.080 CREDIT. Actions required in Article 5 of this Chapter may be credited in the Transportation Plan for their potential contribution to the trip reduction objective as required by this Article.

Section 13.06.090 PARKING SPACE REQUIREMENTS. Parking space requirements for tenant or employee parking for the project may be reduced below the prevailing parking standard by a percentage of the total number of spaces required that is equivalent to the percentage of trip reduction that is to be achieved by the programs specified in the Transportation Plan. In no case shall parking space reduction exceed the prevailing parking requirements or standards relating to tenants or employees.

ARTICLE 7: REPORTING REQUIREMENTS

Section 13.07.000 REPORT REQUIREMENT. Each applicant subject to the requirements of Article 6, and all successors in interest of said applicant obligated to carry out the Transportation Plan or any part thereof, shall submit to the Transportation Coordinator a report by March 1 every year describing the

transportation program. The report shall contain at a minimum the following information:

A. DESCRIPTION. A description of the measures taken to comply with this chapter, including an accounting of the resources expended on ride-share promotion activities.

B. USE. The average number of tenants and/or employees regularly arriving at and leaving the project site for the reporting period by each of the following methods of transportation:

1. Single passenger motor vehicles (including mopeds).

2. Carpools.

3. Van-type vehicles with eight or more commuters.

4. Mass transit.

5. Bicycles.

6. All others.

C. NUMBERS. The total number of tenants and/or employees by work shift at the project site shall be included in the report.

ARTICLE 8: COMPLIANCE WITH REQUIREMENTS

Section 13.08.000 : COMPLIANCE WITH GENERAL PROJECT REQUIREMENTS. The Transportation Coordinator shall periodically review compliance with the general requirements of Article 5 by on-site checks at the common work location or employment site. In the event of non-compliance, the Transportation Coordinator shall report to the City Planning Director who shall review the Transportation Coordinator's report. If the Planning Director determines that the project controller

or major project controller is in non-compliance with the requirements of Article 5, he or she shall issue a letter to the project controller specifying the points of non-compliance.

Section 13.08.010 COMPLIANCE WITH TRANSPORTATION PLAN. The Planning Director, with the assistance of the Transportation Coordinator, shall monitor the implementation of Transportation Plans required pursuant to Article 6 of this chapter. Monitoring shall occur through the reporting procedure required in Article 7, as well as by periodic on-site checks at the facility, and an annual review of compliance with the Transportation Plan.

If the Planning Director determines there is non-compliance with the requirements of the Transportation Plan, he or she shall issue a letter specifying the points of non-compliance.

Section 13.08.020 EFFECT OF RECEIPT OF A LETTER OF NON-COMPLIANCE. Upon receipt of a letter of non-compliance, the project controller, the major project controller, the applicant and all successors in interest of said applicant obligated to carry out the Transportation Plan or any part thereof, as the case may be, shall comply with the provisions of this chapter as set forth in the letter of non-compliance, unless an appeal is filed from the determination of the Planning Director as set forth in Section 2.05.000 of this code.

Section 13.08.030 PENALTY. In the event of failure to comply with the requirements of this chapter or with the terms of a Transportation Plan required pursuant to this chapter, the City may impose the following penalties:

A. Any penalty which may be imposed under the Zoning Code.

B. Any penalty as set forth in the Transportation Plan Agreement, if any.

Section 13.08.040 ENFORCEMENT. The provisions of this Article shall be administered and enforced by the City of Rocklin Planning Department.

Section 2. Within fifteen (15) days after passage, the City Clerk shall cause this ordinance to be posed in three (3) public places in the City of Rocklin.

PASSED AND ADOPTED this 7th day of June, 1982, by the following roll call vote:

AYES: Councilmen: Linton, Dominguez, Hill

NOES: Councilmen: Barkhurst

ABSENT: Councilmen: Wofford

Peter Hill
MAYOR

ATTEST:

Marie A. Lucas
CITY CLERK

CERTIFICATION OF ORDINANCE NO. _____

I hereby certify that the foregoing is a full, true and correct copy of ordinance No. _____, passed and adopted by the City Council of Rocklin at regular meeting thereof, held _____

_____
City Clerk of the City of Rocklin

Appendix G

CULTURAL RESOURCE ASSESSMENT

CULTURAL RESOURCE ASSESSMENT OF THE EL DORADO HILLS PROJECT, EL DORADO COUNTY, CALIFORNIA

Prepared by

Peak & Associates, Inc.
8167-A Belvedere Avenue
Sacramento, CA 95826
(916) 452-4435

Prepared for

Jones & Stokes Associates, Inc.
1725-23rd Street, Suite #100
Sacramento, CA 95816

June 4, 1987

INTRODUCTION

The specific plan area for the project lies in sections 1, 2, 11, and 12 of Township 9 north, Range 9 east; sections 22, 23, 25, 26, 35, 36, Township 10 north, Range 9 east, and sections 30, 31, and 32, Township 10 north, Range 10 east, mapped on the Clarksville 7.5' USGS topographic quadrangle. The land extends from El Dorado Hills Boulevard on the west to Bass Lake Road on the east. White Rock Road forms the southern boundary of the property (Maps 1, 2, and 3). The specific plan area includes both 3786.4 acres of El Dorado Hills Investors' own land plus 298.35 acres of other ownership land, including some residences (referred to in the following as "private property"). Planned land use of the El Dorado Hills Investors' project is primarily for residential units, a village green area, two schools, commercial development, two golf courses, roads, and about 849 acres of open space. The additional lands within the specific use plan will either become or remain residential, or open space or recreation.

Peak & Associates, Inc., conducted an intensive field survey of all proposed land use areas with the exception of a privately-owned 10.5-acre area.

CULTURAL HISTORY

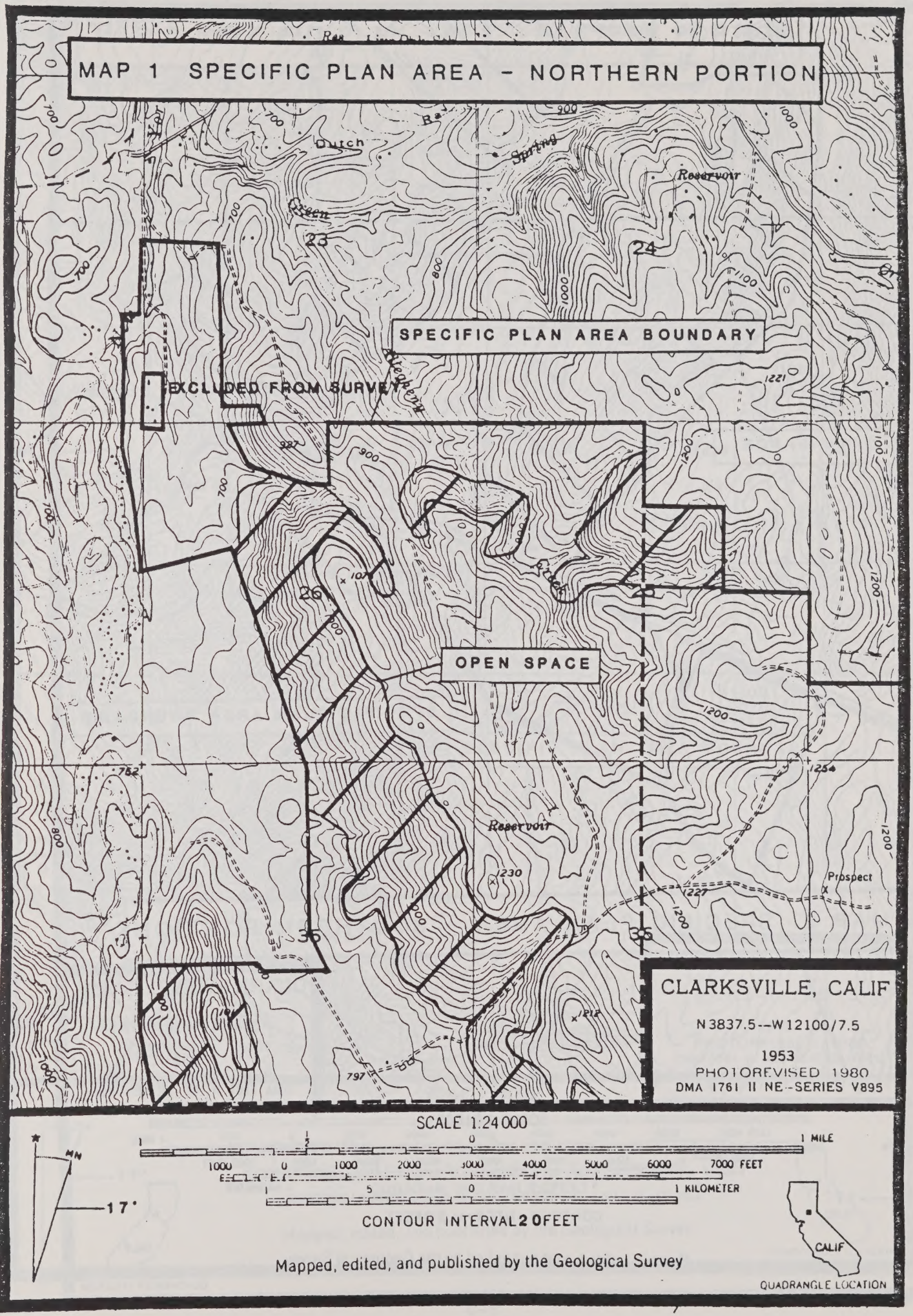
Prehistoric Period

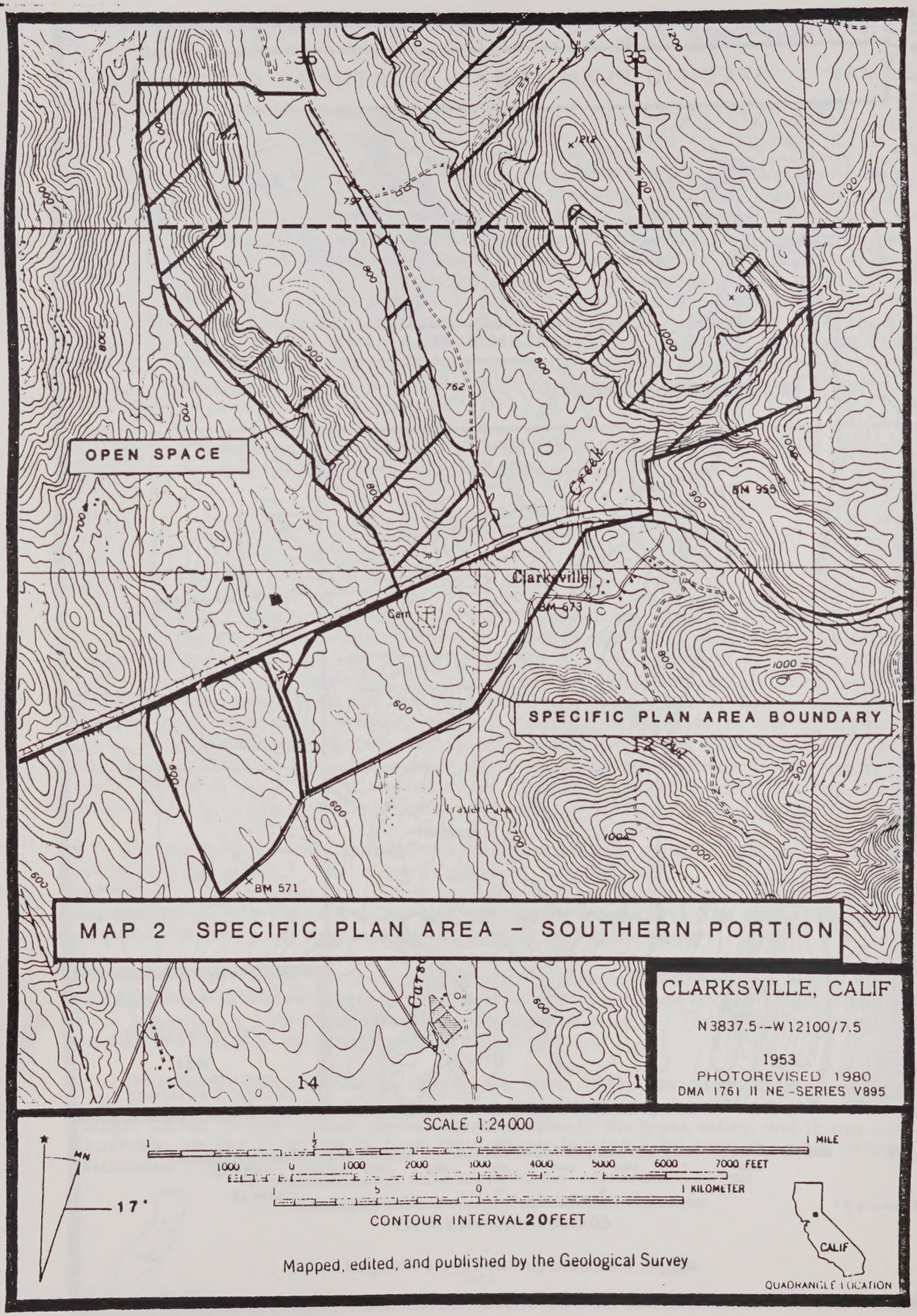
The project area lies in the territory attributed to the Nisenan -- a branch of the Maidu group of the Penutian language family. Tribes of this family dominated the Central Valley, San Francisco Bay areas, and western Sierra Nevada foothills at the coming of the white man. The Nisenan controlled the drainages of the Yuba, Bear, and American rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural similarities. For this reason, they are usually named by this term rather than the more technical "Southern Maidu." In any event, the local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village.

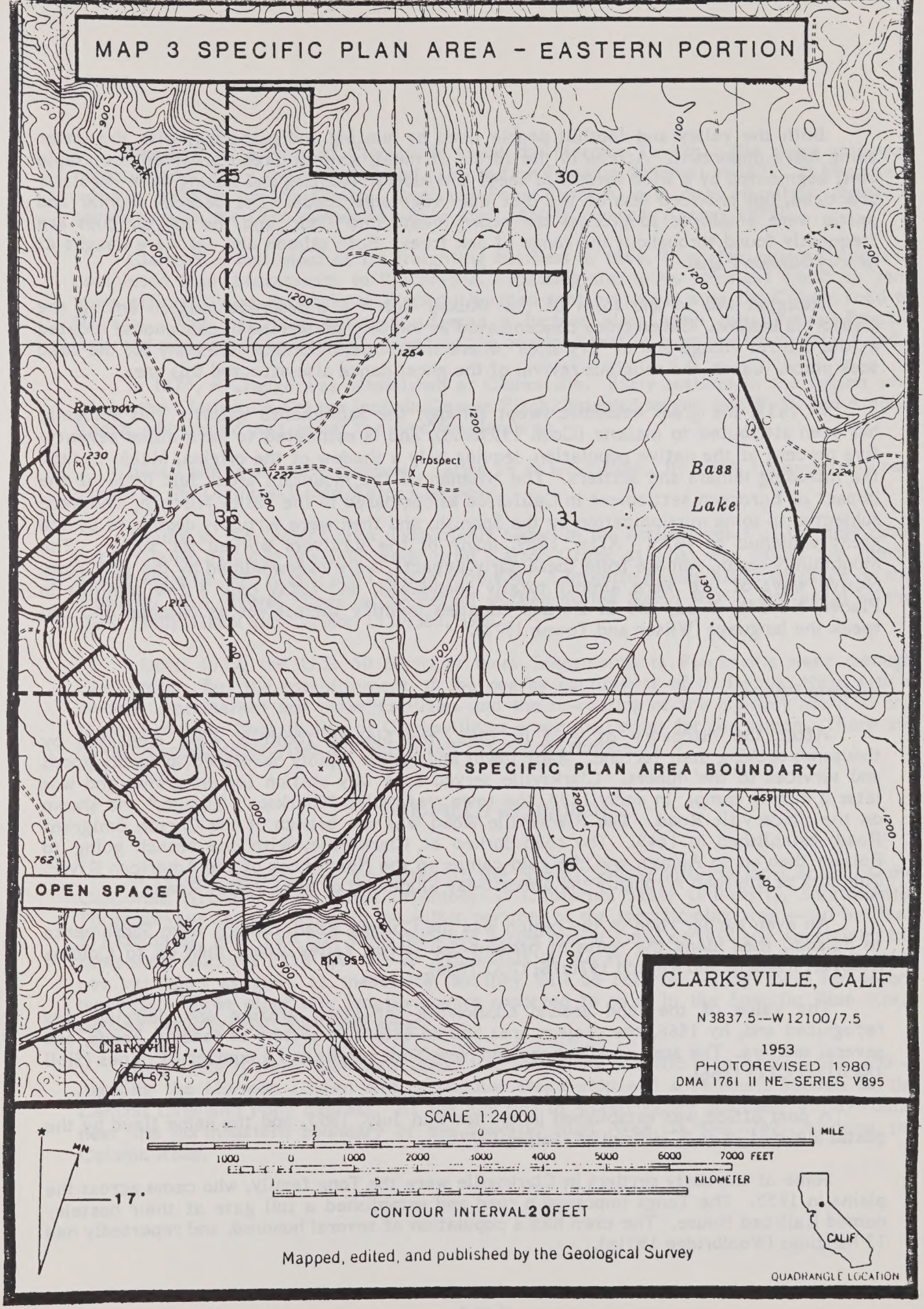
The northern boundary has not been clearly established due to similarity in language to neighboring groups. The eastern boundary was the crest of the Sierra Nevada mountains. Probably a few miles south of the confluence of the American and Sacramento rivers on the valley floor was their southern boundary. The western boundary extended from this point upstream to the mouth of the Feather River.

The Valley Maidu settlement pattern was basically oriented to major river drainages, with ancillary villages located on tributary streams and sloughs. Major villages often supported a population exceeding five hundred people. The inhabitants had an intimate knowledge of the environs within their territory.

The Nisenan who occupied the foothill and lower Sierra Nevada mountain elevations selected village sites on ridges and large flats or meadows near the major streams. These villages tended to have smaller populations than those in the great valley, and it was not uncommon for family groups to have their abodes located away from the main village (Wilson and Towne 1978:389).


MAP 1 SPECIFIC PLAN AREA - NORTHERN PORTION
SPECIFIC PLAN AREA BOUNDARY
EXCLUDED FROM SURVEY
OPEN SPACE
Dutch
Green
Spring
Reservoir
Allegheny
Prospect
23
24
26
25
35
36
CLARKSVILLE, CALIF
N3837.5--W12100/7.5
1953
PHOTOREVISED 1980
DMA 1761 II NE--SERIES V895
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
MN
17°
CALIF
QUADRANGLE LOCATION
Mapped, edited, and published by the Geological Survey


OPEN SPACE
SPECIFIC PLAN AREA BOUNDARY
Clarksville
Cem
BM 673
BM 955
BM 571
Creek
Gravel Pit
MAP 2 SPECIFIC PLAN AREA - SOUTHERN PORTION
CLARKSVILLE, CALIF
N3837.5--W12100/7.5
1953
PHOTOREVISED 1980
DMA 1761 II NE-SERIES V895
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
MN
17°
Mapped, edited, and published by the Geological Survey
CALIF
QUADRANGLE LOCATION


MAP 3 SPECIFIC PLAN AREA - EASTERN PORTION
SPECIFIC PLAN AREA BOUNDARY
OPEN SPACE
Bass Lake
Prospect
Reservoir
Clarksville
BM 955
BM 673
25
30
36
31
1
6
CLARKSVILLE, CALIF
N3837.5--W12100/7.5
1953
PHOTOREVISED 1980
DMA 1761 II NE-SERIES V895
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
MN
17°
CONTOUR INTERVAL 20 FEET
Mapped, edited, and published by the Geological Survey
CALIF
QUADRANGLE LOCATION

Both the valley and foothill people lived by hunting and gathering, with the latter being more important. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were employed to process the acorn meats into flour, and the mortar cups are frequently found throughout the range of oak trees. Both salmon and eel were caught at nearby Salmon Falls.

Religion was in the form of the "Kuksu Cult," a widespread pattern among the California Indians. Ceremonies concentrated in the semisubterranean dancehouse located at the central village and at "cry sites" where the annual mourning ceremony for the dead took place. Later, the religious revival of the ghost dance also affected this area.

In 1833, the great epidemic swept through the Sacramento Valley. This epidemic has been attributed to malaria (Cook 1955:308), and is estimated to have killed seventy-five percent of the native population, leaving only a shadow of the original Maidu to face the intruding miners and settlers. The Nisenan of the mountain areas felt little of the impact of European settlement in California as compared to the Valley Nisenan, who were subjected to some missionization by the Spanish, and then were virtually destroyed by the great epidemic of 1833. After 1839, many of the survivors worked for Sutter. The Mountain Nisenan, remote from these early impacts, were overwhelmed by the gold rush. Native ways of life were almost totally abandoned, and today only a few families in Placer, Nevada, Yuba, and El Dorado counties identify themselves as Nisenan and can speak the language (Wilson and Towne 1978).

Historic Period

After the discovery of gold in 1848, the Sierran foothills were enmassed by thousands seeking their fortune. Many towns and camps rapidly developed to supply goods and services to the miners. Clarksville served as a way station for emigrants and was later a mining camp. In early 1855, the town was called "Clarkson's Village," and shown on the Placerville Road. The Placerville Road was one branch of the Carson Emigrant Road, established in 1849. The road forked at Clarksville, with one branch going to Folsom then on to Auburn and the gold camps on the North Fork of the American River. This fork of the road is roughly the present-day alignment of Silva Valley Road.

An even earlier road in the region was the Coloma Road, running from Sacramento to Folsom, then along the route of present-day Green Valley Road, then on to Coloma (Hoover, Rensch, and Rensch 1970:76; GLO 1856).

The value of the land around Clarksville for stock grazing and dairying was recognized and, by 1866, the project area had an extensive system of fencing, roads, and several settlers. The area of Allegheny and New York creeks had a number of mines (Sioli 1883:112; GLO 1866).

A post office was established in the town in July, 1855, and the name fixed by the postal authorities as "Clarksville" (Salley 1977).

Some of the early settlers in Clarksville were the Tong family, who came across the plains in 1855. The Tongs improved a road and established a toll gate at their hostelry named Railroad House. The town had a population of several hundred, and reportedly had 13 hangings (Woolbridge 1931a).

One-half mile west of Clarksville stood the Mormon Tavern. The stage stop was constructed in 1849 and enlarged and operated by Franklin Winchell in 1851. It became a remount station of the Central Overland Pony Express, with Sam Hamilton changing horses here on the first eastbound trip in April 1860 (Resources Agency 1979).

Clarksville lost most of its freighting business in 1866, when the railroad line was completed from Sacramento to Placerville, bypassing the town. Freight could be sent more efficiently on the train to Placerville, then sent by wagon over the Carson road to Nevada. The freighting business suffered a further blow when the Central Pacific Railroad was completed in 1867, diverting the overland traffic from the Placerville Road.

In 1874, a Grange was established at Clarksville. Early settlers in the region who joined the Clarksville Grange include George Fitch, Joseph Joerger, and W. D. and Amelia Rantz, who owned portions of the specific plan area.

Bass Lake is an early reservoir, dating to at least 1866. By 1925, its ownership had passed to the Diamond Ridge Water Company.

Mining in the project area undoubtedly began in the earliest years of the gold rush. Later mining included dragline dredging of Carson Creek at what was called the Jumbo Placer Mine in 1923 (Clark and Carlson 1956:434). Chromite mining also took place on the property, with several mines in the region worked during World War I, and again in the early 1940s (Clark and Carlson 1959:387, 393).

Until 1939, the U.S. 50 Highway from Sacramento to Placerville went through Clarksville. But the establishment of the nearby community of El Dorado Hills with a modern supermarket and other facilities and the re-routing of the highway north of the town caused the final decline of Clarksville as a service center for the region. There are no commercial enterprises and only a few residences remain.

PRE-FIELD RESEARCH

A records search was conducted at the North Central Information Center of the California Archaeological Sites Inventory at California State University, Sacramento. Three surveys have been conducted within portions of the specific plan area -- all by Peak & Associates, Inc. Two site were recorded during one of these surveys and were given the temporary numbers ED-1 and ED-2. Trinomials in the statewide accession system have not yet been assigned to these site, so they will be referred to by their temporary numbers. Three other site locations were reported to exist in the Specific Plan Area, outside the previously surveyed areas.

One State Historic Landmark (SHL) lies within the Specific Plan Area -- SHL 699 -- marking the Mormon Tavern site, a popular stage stop and a remount station of the Central Overland Pony Express. At the junction of Green Valley and Deer Valley roads, near the northeastern boundary of the Specific Plan Area, is SHL 747, marking the Coloma Road.

FIELD SURVEY

The portions of the specific plan area indicated on Maps 4, 5, and 6, were surveyed on-foot on February 16 to 20, 23, and 24, 1986, by Melinda Peak, Robert Gerry, Neal Neuenschwander, and Mary Peters (resumes attached, Appendix 1). The two previously recorded sites were revisited, and the reported sites were recorded. In all, there are 29 archeological sites within the surveyed area and 31 isolated features. One site, EDH-21 extends onto private property, and only a portion of the site could be recorded. All site and isolate forms are presented in confidential appendixes 2 and 3.

Additional site recordation on EDH-2 and EDH-5 was conducted by Gerry and Neuenschwander on April 13-17 and 21, 1987.

Additional survey was conducted by Peak, Gerry, and Neuenschwander on May 28 and 29, and June 1, 1987.

The Clarksville Cemetery also lies within the Specific Plan Area. It was not recorded as a site because its boundaries are documented on the USGS topographic quadrangle, and a record has been published detailing the decedents and all information from the markers (Bayless and Mello 1982).

Throughout the project area, there are a number of prospect pits, glory holes, and tailings -- all are the physical remnants of exploration and mining.

In the areas where gold-bearing gravels are located in the Sierra, miners have attempted to locate profitable areas to work, or have worked the streams. Except where there is a concentration of activities or features, this type of feature has not been recorded. It is impossible to date the features, and they have no research value.

Rock piles resulting from the clearance of fields were also not recorded. It is impossible to determine the date these were created, and they have no research value.

A local resident reported that an Indian cemetery exists on the north side of US 50, south of Tong Road and east of Silva Valley Road. No physical trace of this was found during the field survey. An interview with Jess Tong revealed that the site was actually several historic period graves in an area of potential impact. The site was visited and Mr. Tong was able to define the approximate boundaries. The corners were staked, and the precise location will be surveyed.

RECORDED SITES

ED-1

The site is a bedrock mortar station with five cups and a grinding slick. These are in two large, flat bedrock outcrops. The site has no associated midden, and the only artifact found was a broken, modified cobble mano. The milling station is in a grove of live oak trees, 15 meters north of the small stream.

ED-2

The site is an historic period structural remnant with associated bedrock mortars that lies on the east side of Carson Creek. The structure was constructed of dry-laid

TABLE 1 - RECORDED SITES

	PREHISTORIC		HISTORIC									
SITE #/ NAME	MIDDEN	BRM	IC/S	M/RC	DITCH	DAM	ROAD	RF/W	SA/HD	CORRAL	PP/GH	WELL
ED-1		X										
ED-2		X	X						X			
EDH-1				X		X	X		X			X
EDH-2				X	X	X		X		X		X
EDH-3		X						X				
EDH-4				X			X	X	X		X	
EDH-5		X		X	X	X	X	X		X	X	
EDH-6		X										
EDH-7		X										
EDH-8			X						X			X
EDH-9				X					X			
EDH-10			X									
EDH-11	X			X	X				X			
EDH-12		X										
EDH-13				X	X							
EDH-14			X						X			
EDH-15			X				X			X		
EDH-16			X								X	
EDH-17				X			X					
EDH-18		X										
EDH-19		X										
EDH-20		X										
EDH-21	X	X										
EDH-22			X						X			
EDH-23			X									
EDH-24			X									
EDH-25			X									
EDH-26		X										
EDH-27		X										
EDH-28			X									
EDH-29				X	X	X	X					

KEY: **BRM** = Bedrock Mortar; **IC/S** = Isolated Cabin/Structure; **M/RC** = Mining/Ranching Complex; **RF/W** = Rock Fence/Wall; **PP/GH** = Prospect Pit/Glory Hole; **SA/HD** = Surface Artifacts/Historic Debris

stone with 32-inch-wide walls. The interior dimensions are eight feet four inches by eleven feet. The northwest wall that faces the creek has an arc opening to the interior. This measures 27 inches across at the back and 56 inches on the front. The arc probably was the hearth area. There has been some collapse of the walls, leaving them, at the maximum, 34 inches in height. An olive green neck from an ale/porter/sweet wine bottle and few glass and metal fragments are associated.

Overlooking the creek and immediately northwest of the structure is a large exposure of bedrock with five mortar cups ground into the surface. One additional smooth area may be an incipient mortar cup. No prehistoric period artifacts were in association, and troweling of the dark soils around the structure failed to produce lithic artifacts. One mortar cup contained rusted metal scraps and a glass shard.

EDH-1

This is the remnant of an enclosure surrounding a home and gardens, and associated features of the ranch. The enclosure is formed by a series of poured concrete pillars that were stuccoed and painted red and green. The pillars formed a large rectangle, and the entry to the enclosure is on the east. The pillars were connected across the top with sections of pipe, and presumably some fencing material attached to these. The entry walkway is lined by low walls, and there are a series of flat, concrete slabs with designs traced into their surface. One is dated "33." Within the enclosure are two features -- a large "shrine" of rock with a concrete tub below, and a four-compartment, concrete "bath." Outside the enclosure are a number of features -- two walls, a watering trough, dam and water storage tank, and a rock foundation for a barn, as well as historic debris -- both inside and outside the enclosure. It is difficult to determine the original configuration of features within the enclosure, and impossible to determine the function of most of the features.

EDH-2

EDH-2 is a well-preserved, mud-mortared stone cabin on a drainage, with a rock-lined well, collapsed rock oven, and several fig trees. There are two other small structures of unknown us near the associated corral. The structures and corral are of dry-laid rock. In addition, there are a number of rock features on the drainage immediately upstream from the cabin. The site covers a large area, and a scaled map of the entire site could not be accomplished using tapes and compasses. A detail map was prepared of the cabin area.

EDH-3

South of EDH-2, the site has a bedrock mortar station on each side of the drainage. The cups are all shallow, and associated are three sections of a historic rock wall.

EDH-4

The site complex was identified as simply a hearth in 1984. The present survey found not only a dry-laid stone hearth and partial wall of a cabin, but also a large, semisubterranean dry-laid stone cabin on the hillside. Above the cabin is extensive rock

wall. Near the hearth is a large prospect pit, and there is an improved ford on the creek below the historic period features. There are a number of artifacts at this site, partially due to the number of holes dug by vandals near the hearth. The artifacts are consistent with the early gold rush years (1848-1850s). The vandals left recent trash at the site.

EDH-5

The site is a vast complex of both historic and prehistoric features extending over a mile. A preliminary map and site form were prepared, but the size of the site precludes accurate mapping and recordation at this time. The prehistoric features include a number of bedrock mortar stations along Carson Creek. Historic features include eight dry-laid stone structures/structural remnants, two large stone corral areas, a dam and rock-lined ditch system, one stone and packed-earth check dam, a major roadway with dry-laid rock supports and bridge abutments, several minor roadways and ditches, rock cairns, one collapsed frame structure, a number of dry-laid rock terraces and supports, introduced vegetation, and mining prospect pits and tailings.

The site may represent an extension of the town of Clarksville. One of the corrals was identified and reported by Peak & Associates, Inc., in 1984.

EDH-6

Identified in 1984 by Peak & Associates, the site is a bedrock outcrop with five cups ground into the upper surface. Four cups are well-developed. The site is on the south bank of a branch of Carson Creek.

EDH-7

Also a bedrock mortar station, the site consists of two shallow cups ground into a single boulder. The boulder lies on a hillslope near Bass Lake.

EDH-8

The site consists of the dry-laid rock walls of a rectangular, semisubterranean cabin, and well. An 1866 map of the region indicates that this structure was "Crissy Cobb's house." The site lies along an old roadway and overlooks a small reservoir.

EDH-9

Probably dating to the 1920s or 1930s, the site consists of two collapsed frame structures. The house remnant lies near a ford of Allegheny Creek, and there are a number of household items surrounding the structure. The barns are situated on the hill above the structural remnants.

EDH-10

This site lies above a section of Allegheny Creek that was extensively worked for gold. The site consists of a dry-laid stone hearth and partial cabin walls. No other features are present and no artifacts were observed.

EDH-11

The site has both prehistoric and historic components. The prehistoric component is a midden (cultural deposit) at least 50 centimeters in depth on a terrace over Allegheny Creek. The midden has been disturbed by bottle collectors' excavations in the materials overlying the midden. A number of prehistoric period artifacts were found, including two granite pestles, an obsidian Desert Side Notched projectile point, chert flakes, and a granitic mano fragment. Non-artifactual material relating to the prehistoric occupation of the site included burned bone, charcoal, and shell fragments. There are a number of historic period artifacts in this area, including bottle fragments, porcelain fragments, metal scraps, and a tobacco tin as well as modern trash. Other features at the site include a dry-laid stone structure and stone-line tailrace along a tributary to Allegheny Creek, and a dry-laid stone hearth with a possible second hearth to the north of the tributary stream.

EDH-12

This prehistoric site consists of five mortar cups ground into the surface of a single bedrock outcrop. The site is on a narrow terrace on a steep-banked section of Allegheny Creek.

EDH-13

At the junction of Allegheny Creek and an unnamed drainage, there are the remnants of at least two dry-laid stone cabins. Structure one is quite large and lacks a hearth. A small retaining wall and ditch have been built upslope to protect the cabin. Structure 2 is somewhat smaller and has a hearth. There is a rectangular pile of stone next to Structure 1, and possibly represents a third cabin.

EDH-14

In the central portion of the Specific Plan Area are the extensively-altered remains of a large, two-story frame structure. The house roughly corresponds to the location given on an 1866 plat for "G. C. Fitch's house." The house had a one-story addition to the rear, and had extensive alterations in the 1940s. The frame structure was covered with stucco, and had new masonry porches added and a masonry wall across the front of the yard. There are two barns nearby, but these have been extensively altered and were not recorded. The structure was used until 1970 when it was burned.

EDH-15

The site consists of a dry-laid stone circular corral, rock fences on both sides of a drainage, and a dry-laid, semisubterranean rock structure. A large amount of earth was excavated on a steep bank and the structure is built using the natural bedrock in portions of the hillside wall. The chimney is built into one of the walls, primarily supported by the bank. The chimney is about 10 feet in height, and has a minor amount of collapse.

EDH-16

EDH-16 consists solely of a small, dry-laid stone hearth. There is no other evidence of artifacts or features. No other foundation is present.

EDH-17

The site is located on an open hilltop area and represents the remnants of ranch outbuildings. There is a major rock fence and a single course of stone was laid out from the rock fence to form the foundations for frame structures. The rock wall would have provided a wind-break for the structures. There is no permanent water source near the site, and use would have been seasonally limited.

EDH-18

The site lies on a open hillside, some distance from any water source. It consists of four mortar cups ground into the top of a single boulder. There is no other evidence of artifacts or a cultural deposit.

EDH-19

The site is comprised of two bedrock mortar stations near Bass Lake. Station A contains four cups ground into a single boulder and Station B has one cup.

EDH-20

EDH-20 is also a bedrock mortar station, consisting of four cups ground into a single boulder. No other cultural materials are present.

EDH-21

The site could only be partially recorded. It extends onto private property, and the owner refused access to Peak & Associates. Outside of his property line lie two bedrock mortar stations. Station A has two cups and Station B contains seven cups. There are two more bedrock mortar stations on the other parcel and a midden deposit. The owner reports finding "five arrowheads plus a handful of flint" during the construction of a pad for a shed. No midden could be found outside the owner's fenceline.

EDH-22

This site is the root cellar for a nearby home dating to the 1880s. The cellar is cut into the bank of a drainage, and is partially rock-lined. The cellar has been used as a trash pit since abandonment of the structure. Some of the debris in the cellar dates to circa 1900-1920, suggesting abandonment at about the turn-of-the-century. Wood has been placed over the debris to fill in the depression.

EDH-23

The site is a large, dry-laid stone structure. The cabin is semisubterranean, with an apparent entry on the west. No hearth could be defined. The southern wall has a shelf built in. The structural remnant may actually be the cellar of a large frame structure.

EDH-24

The site is the remnant walls of a small, dry-laid stone cabin. The cabin lies on a tributary to Allegheny Creek that was extensively mined.

EDH-25

EDH-25, on the side of a gently-sloping hill, is the collapsed remnant of a mud-mortared, stone cabin. Near the cabin is an improved spring that is still in use for watering the cattle in this arid grassland portion of the project area. The nearby spring undoubtedly caused the selection of this site for the cabin.

EDH-26

This site is a fairly large complex of bedrock mortars and rock art. There are found boulders containing mortar cups. One of the boulders also contains two small cupules. There is also a second boulder containing five cupules. The cupules are a form of rock art. Researchers have suggested a variety of interpretations for the rock art; the most commonly accepted function is that of a form of fertility magic (Payen 1965:86). Two flakes were also found at the site.

EDH-27

EDH-27 is also a prehistoric site. It is comprised of two bedrock mortar stations on opposite sides of an unnamed drainage. The mortar cups of Station B are quite deep, with many exceeding 25 centimeters in depth. No other cultural materials could be found.

EDH-28

The site is the remnant of a small mud-mortared cabin. The cabin lies near a drainage. Later hydraulicking or sluicing eroded the bank of the ravine, and part of the cabin was destroyed by the subsequent erosion. The cabin wall remnant includes the collapsed hearth. No other cultural material or artifacts were found at the site.

EDH-29

The site is a large complex of historic features with an associated bedrock mortar station. The site includes the remnants of a dry-laid stone stamp mill, several dry-laid stone terraces, a road trace and rock bridge abutments, and the Tong family cemetery. The mine adit is located under U.S. 50. The stamp mill machinery was sold about 70 years ago to Bob Craig and moved to another mine in the region. The cabin's occupancy was

related to the operation of the mine (Jess Tong, personal communication).

There is also a small reservoir with a circular rock wall on the hill above the mill.

The Tong cemetery includes a fenced-off area, with all family graves as well as the grave of a family friend dating to 1856. Outside the fence, there is one grave with a headstone (no name, but a date of 1869), and a number of unmarked graves, distinguishable only by rings of emplaced rock.

ISOLATED FEATURES

A number of isolated features were recorded by the survey team. Forms were prepared for each, and locations plotted on the maps (Appendix 3). Most of the isolated features are rock walls. The table below identifies each feature:

Table 2
Isolated Features

Number	Rock Wall	BRMs	Historic Roadway	Mining Features	Other	Comments
1		X				
2		X				
3			X			
4				X	X	Glory hole, historic artifacts
5	X					
6	X					
7	X					
8		X				
9	X					
10				X		Ditch
11			X			
12					X	Rock circles
13	X					
14	X					
15	X					
16	X					
17	X					
18			X			
19	X					
20	X					
21	X					
22	X					
23	X					
24	X					
25		X			X	Lambing pen
26	X					
27	X			X		
28					X	Dam
29	X					
30	X					
31	X					

ARCHIVAL RESEARCH

After the field survey was completed, a program of archival research was conducted by Melinda Peak to provide information to aid in the evaluation of the historic sites, with respect to their eligibility to the National Register of Historic Places.

The following facilities were visited: El Dorado County Recorder's Office, Surveyor's Office, California State Library, Bureau of Land Management, and the Bancroft Library. Primary records on file with the county that were utilized in the study include homesteads, patents, pre-emptions, deeds, mortgages, burial permits, and death records. Cartographic sources include General Land Office plats dating to 1858 and 1866, official county maps from 1895, 1908, and 1925, and the 1892 topographic quadrangle. Other primary sources include the 1860, 1870, 1880, 1900, and 1910 census schedules; 1850-1880 special agricultural schedules; El Dorado County Great Registers of Voters 1867-1977; and several newspapers. Secondary sources include various published biographies, the 1883 county history (Sioli), and a recent regional history (Wilson 1986).

Interviews were conducted with a number of knowledgeable informants including Jess Tong, Mimi Tong, Elwood Tong, John Wilson, Mrs. Richard Kimball, Armand Kimball, Betty Joerger McKinley, Agnes Walker Shinn, Phyllis Barton Simpson, and Jean McKinley Rencevich.

Several problems were encountered during the research. First of all, most of the project area was not surveyed and subdivided into sections until 1866. Land descriptions before this date therefore do not contain legal reference points. The early descriptions reference trees, rocks, streams, ditches, place names (some of which differ from the modern names), and the names of neighbors, whose land descriptions are equally vague. Many of the early claimants moved on after a year or two. Others never bothered to file documents for ownership of the land. The unclaimed lands were granted to the Central Pacific Railroad in the late 1860s, and many individuals who had been living on the land were forced to pay the CPRR for their ranches. In many cases, the early land ownership record then is the deed from the CPRR.

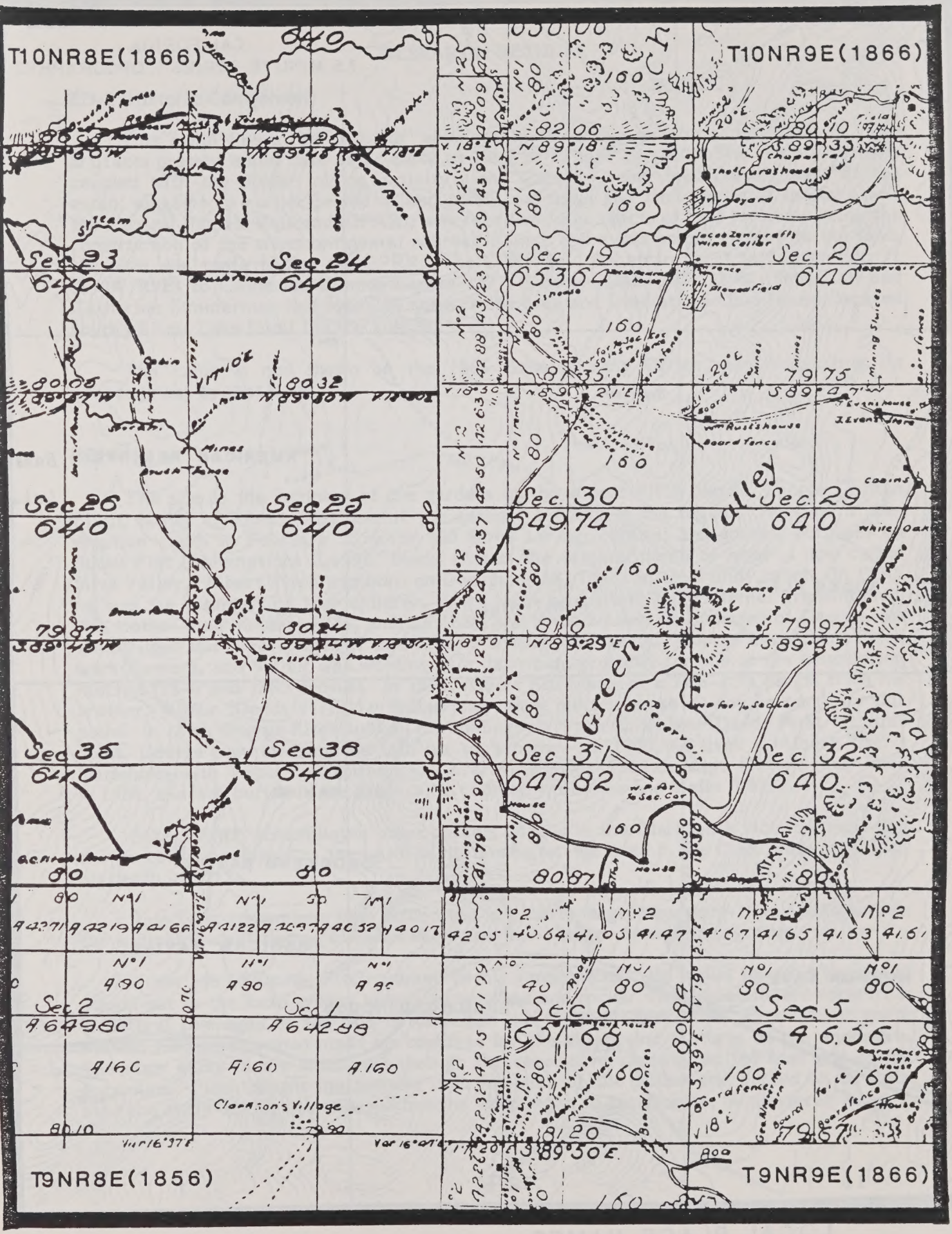
Another problem in identification was due to the early mapping of one of the townships, T9N R8E. The township was mapped in 1856 by a surveyor who only followed the section lines, making little attempt to show any physical or man-made features. The Mormon Tavern, a prominent local landmark at the time of the 1856 survey, does not even appear. Unfortunately, the large site EDH-5 lies primarily within the township, so no details of roads or cabins are shown in this area.

In addition, most of the tax assessment records for El Dorado County were destroyed by the county itself in the 1960s. The earliest books for the 1850s and 1860s were sold to a private library in southern California, the Huntington library, and are only available for use at their facility.

Finally, the spelling of personal names varied, partially as a result of language and communication problems. One individual, a German immigrant, is identified variously as Anton Banholzer, Henry Antone, and Antoine Barnholtz.

Map 4 shows the project area as mapped by the surveyors for the General Land Office. Township 9N, Range 8E was mapped in 1856, and the other three townships ten years later.

Map 5 gives some of the early names for physical features within the project area.


T10NR8E(1866)
T10NR9E(1866)
T9NR8E(1856)
T9NR9E(1866)
Sec 23
Sec 24
Sec 26
Sec 25
Sec 35
Sec 36
Sec 19
Sec 20
Sec. 30
Sec. 29
Sec 31
Sec. 32
Sec 2
Sec 1
Sec. 6
Sec 5
Green Valley
Clarkson's Village

MAP 4

LOCAL PLACE NAMES

MAP 5

RESEARCH RESULTS

ED-2 (Historic Component)

This cabin lies in an area for which early ownership cannot be determined. The artifacts present could date to as early as 1849 or as late as 1880. The remote setting, coupled with the placer mining activity along Carson Creek, immediately west of the cabin, suggests an earlier period of occupancy and use. The first owner of the land was the Central Pacific Railroad (CPRR), who received large tracts of land for completing the construction of the transcontinental railroad. Since there was no prior claim to the land, the title was confirmed to the CPRR. The CPRR sold the entire west half of section 31 (T10W R9E) to Catherine Zimmerman in 1877 (Deeds U:282, 284, 289). Sebastian and Catherine Zimmerman had over 700 acres in the area and lived at the Ohio House, located south of Bass Lake (Sioli 1883:271-272).

The cabin is not shown on the 1866 General Land Office map, suggesting its abandonment by that date.

EDH-1

The site is the remnant of the gardens of the Albert Fitch home. George Clinton Fitch, father of Albert, was one of the earliest settlers in the region. He filed a pre-emption claim in February 1856 for 160 acres for agricultural and grazing purposes on Bucks Flat (Preemptions C:439). Bucks Flat is the original name of what is now called Silva Valley. Albert Fitch was born on December 18, 1863, on the family ranch. In 1870, he was the youngest of four children, living with his parent and maternal grandmother. His mother died in June, 1871, and, by 1880, the Fitch household consisted of George, his sons Wilbur and Albert, ages 27 and 17, and a daughter, Addie. George and Albert Fitch were farmers, and Wilbur was working as a dairyman, probably for one of the neighboring ranches (1870 and 1880 census). In 1891, Albert Fitch bought a 34.6-acre parcel from his brother, Wilbur (Deeds 41:191). Wilbur may have built a house on the property by this point. In 1894, George Fitch sold all his holdings to Frank X. Walker (Deeds 46:8). At this point, George may have moved into his son's home. In 1900, he lived in Albert Fitch's household, with Wilbur Fitch, who was a nearby neighbor (1900 census). George Fitch died in 1904, and was buried in the Clarksville cemetery (Bayless and Mello 1982:2).

Albert Fitch accumulated other parcels of land in the Clarksville vicinity, including the parcel immediately to the south of his homesite. He lived in the Clarksville area until his death in 1955.

Jess Tong remembers that Fitch lived in a fairly large, two-story-frame home within the enclosure identified as EDH-1. The house had a large veranda facing west.

From the 1930s on, Fitch worked on his garden area. He would take his horse and wagon out to the local creeks and collected sand and rocks. He also collected rock from structural remnants of the lots he owned in the town of Clarksville. Fitch would go to Folsom for cement, then made his concrete for the pillars and features of the enclosure. The main entry to the home was through the decorative archway on the east side of the enclosure. Fitch bought inexpensive urns for each of the pillars and placed an ox yoke over the entry on the west side. When the yoke began to deteriorate, he plastered it.

Fitch was an avid gardener. He wanted to have a tree from every country in the world on his property, hence the great variety of tree species within the enclosure. The tubs on the site were used for water storage, and windmills were used to pump the water for the gardens. The "shrine" is what Fitch called his rock garden. He planned to use it as a fountain, but water was too scarce to ever have provided a regular source for this purpose (Jess Tong, personal communication).

Albert Fitch's home completely burned in the early 1950s. Fitch ran back into the home to recover his possessions and came out with his clothes aflame. He then had to be restrained to prevent his re-entry into the home. The fire drove out a number of bats, apparently living in the attic or upper story rooms. Fitch then moved into Clarksville to the Kyburz house, which had belonged to his sister, Jennie Kyburz, and also to his brother, Wilbur. Fitch lived in this house until his death at age 91 (Mimi Tong, personal communication).

EDH-2

The site lies in an area for which early land ownerships could not be positively identified. The structure is shown as a house on the 1866 General Land Office map of the area. The road through the site closely corresponds to 1866 road alignment.

In 1854, William Johnson filed a preemption notice on a one-half-mile square tract of land south of Green Springs Ranch. The land lies east of George L. Donahue's land, and includes a portion of Carson Creek (Preemptions C:380). In 1895, the Donahue family owned the northeast quarter of section 36, T10N R8E (county map). The location of Johnson's claim must therefore have been approximately the northwest quarter of section 31, T10N R9E. In 1861, the Johnsons acquire the Hill ranch further down Carson Creek. The structure may be the home built by the Johnsons, in which they lived until the early 1860s.

The 1860 census-taker visited first EDH-8, then headed east to the Donahue household. The surveyor's next stop was at William Johnson's household, while the following entry is for the Rust household. The Rust family lived about one mile northeast of the project area on Green Valley Road.

The Johnson household consisted of William, a 35-year-old farmer born in Sweden; his wife, Judith, 20, born in Virginia; and their two sons, ages 4 years and 5 months. Johnson's real estate is valued at $1100, and his real estate at $600 (1860 census).

A 1931 biography of Edward Johnson, the younger Johnson boy, gives more details about the family. Mrs. Johnson's maiden name was Donahue, and she must be an older daughter of George and Teresa Donahue, owners of the adjacent parcel. The Donahues crossed the plains in about 1853 , after leaving their home in Virginia. William Johnson came to California in 1849 and crossed the Isthmus of Panama to reach the Pacific (Wooldridge 1931a:415). The Donahues and Johnsons must have selected their land together, and filed for the adjacent parcels. George Donahue worked as a miner, so Johnson probably ran his stock on both pieces of land. The Donahues' cabin may also have been on the Johnson's land. EDH-2 included the remnants of a second cabin. This may have been the Donahue's cabin, although it is more likely that they lived in the other house shown in this quarter-section parcel on the 1866 map, which can be correlated to EDH-25.

Jess Tong remembers a miner living in a cabin at EDH-2 in the 1930s.

The Johnsons never obtained ownership of the parcel. The land is part of the lands given to the CPRR. The first individual to actually own the land is Catherine Zimmerman, who purchased the west half of section 31 (T10N R9E) from the CPRR in 1877 (Deeds U:282, 284, 289). Structures at EDH-2 may have been rented out, or used by laborers for the Zimmermans.

EDH-4

The cabin structure at this site dates to at least 1866. It is clearly shown immediately west of the sectional dividing line on the 1866 map. The creek ford may represent the same road shown on the map.

Unfortunately, the ownership for this site could not be established. Without a page-by-page search, a pre-emption claim filing is not readily available. The earliest recorded ownership for this site is the CPRR, which received the land in the late 1860s. It is then transferred to Catherine Zimmerman in 1877 (Deeds U:284). Since the structures predate both the CPRR and Zimmerman's ownership, they remain unidentified. The structures may have been abandoned long before Zimmerman's ownership and be the remains of miners cabins. The prospect pit and placer mining of Carson Creek in this section tend to support this use of the land. The builders of the cabins may have lived there for a very short time period, and moved on when the readily available gold played out. Others may have come into the area and reworked the creek or prospected for a quartz vein. The identification on the map is for a house rather than an abandoned cabin, suggesting the structure was still occupied at the time the surveyors were on the land. In any event, the land had no claimant by the mid-1860s and was granted to the CPRR.

EDH-5

EDH-5 is a complex of historical features, covering a large geographic area. Included in the complex are two linear features -- a major roadway and a well-defined ditch. There are 15 structures present. Although recorded as one entity, the features will be discussed separately or in groups of related features.

Roadway -- This roadway is the remnant of one of the earliest roads in the region -- the Giles or Mormon Hill Toll Road. In 1853, John W. S. Giles filed a pre-emption claim for a 160-acre parcel located 400 yards north of Railroad House and one-half mile east of Mormon Tavern. This parcel would be somewhere near the southeast quarter of section 1, T9N R8E. This ranch is variously known as the Mormon Hill Ranch and the Giles and Cary Ranch. The road is first discussed in a series of land transfers in 1861 between Giles, W. Bowers, and Alexander Wiley (Deeds F:537, 538; G:176, 179). The road is described as "...commences about 300 feet east of the Mormon Tavern and runs in a easterly direction along the north side of what is called Mormon Hill about (¼) one-fourth of a mile north of the Town of Clarksville and said road ends at or in the neighborhood of W. W. Meybees house" (Deeds H:172).

The Tong family owned a competing road, originating at the Railroad House (at the northeast corner of the town), and heading north and east around the south side of the next major hill. This roadway, known as the Tong Toll Road, has been destroyed by Highway 50.

In October of 1861, S. T. and Margaret Tong acquired a one-half interest in the Giles Toll Road (Deeds G:176). In May of 1863, S. T. Tong acquired the other half interest, thereby eliminating the competition. Later documents discuss the sale of the Tong Toll Road in the 1870s and 1880s (Deeds V:311; 27:636; 28:537), but no mention is made of the Giles Road. It may have fallen into disrepair or have been converted to a local road between ranches.

Ditch -- The major ditch that originates on Carson Creek and continues west, then north around the edge of the hill known locally as Goat Hill, dates to the 1850s. In 1860, a system of reservoirs and ditches was sold by George Washington Hill and two others to the Eureka Canal Company. This section of ditch is described as, "a certain ditch starting from the American Ravine near its junction with Big Ravine, a distance of one-fourth mile more or less. Also, a ditch commencing on Big Ravine at the intersection of the first described ditch and running thence a distance of two and one-half miles more or less to a reservoir situated on Bucks Flat known as Bucks Flat reservoir..." (Deeds E:479). Using evidence from other early land records, this indicates that this is indeed the early ditch described.

The Eureka Canal Company provided water from the North Fork of the Cosumnes to a number of mining districts by 1856 (Sioli 1883:104), but it is not known how long the company operated. The good state of repair for the ditch in EDH-5 suggests that the ditch was maintained to provide water onto what would be George Fitch's property.

Corral and Dairy -- The Cliffords are the earliest owners of the southwest quarter of section 36. Their property, when sold in 1870 to William Doddridge and Addison Rantz, was reported to be bound on the east by Mrs. Glines (Deeds N:540). There is no documentation as to how Mrs. Glines acquired this property.

In 1864, William D. Rantz married a Miss Amelia T. Glines, a native of Iowa, who settled in El Dorado County in 1860 (Carpenter and Millberry 1914:771). Rantz and his brother, Addison, had arrived in El Dorado County in 1859. During his first 18 months in the county, he engaged in mining. After that, he operated a dairy and raised stock for fourteen years, until he moved to Lake County (Palmer 1881:270). The Rantzes have land in both section 36, T10N R8E, and section 1, T9N R8E.

In 1880, William Rantz sold the south half of section 36 and the northeast quarter of section 1 to Antone Russi (Deeds W:594, 598, 600). Russi may have been on the land prior to his purchase, although his oldest son is born nearby on a ranch near Shingle Springs in 1876. Antone Russi was born in Switzerland in 1847. He started a small dairy business, which he built up to an extensive business on his home place (Reed 1923). The dairy and corrals may have been built by Rantz, and used by Russi after 1880.

In 1880, Russi's farm, fences, and buildings were valued at $1000, his farming implements and machinery at $75. His livestock, valued at $1500, included 9 horses, 57 dairy cows, 62 other cattle, 12 swine, and 149 chickens. Russi produced 7500 pounds of butter and 100 pounds of cheese in 1879. He raised 30 tons of hay on 40 acres of grasslands.

Russi's household included three hired men -- one working as a placer miner, one a rancher, and one a farmer.

Russi died at his summer range in Placer County on about August 20, 1891 (Deeds 120:282). Mrs. Maria Louise Russi was left with six children. She remarried soon

thereafter to Frank X. Walker, an employee of the Russis for seven years. In 1894, the Walkers bought the Fitch property and presumably moved to the site of EDH-14 at this point. The dairy operations were also probably moved at this time, suggesting abandonment of these features in the mid-1890s.

Structure 2 -- The land in the northwest quarter of section one was claimed in 1873 by Rosa Banholzer, wife of Anton. Little description is given other than that the ranch is known as "Anton's Ranch" (Homestead B:458). Banholzer was on the land by 1865, buying a small piece of land from the Murphys in the adjoining section (Deeds J:621). In 1870, Banholzer, age 55, was working as a miner. His real estate was valued at $300, and his personal estate at $250. Banholzer's wife was 40 years old, a native of Chile.

Banholzer sold a half interest in the property to John Muff in 1877, who in turn sold the half interest to Conrad Russler in 1879 (Deeds V:362). Banholzer sold the other half interest to Russler later in the same year. Included in the sale were "all the stock, fowls, and farming utensils, cooking utensils and other furniture in said premises" (Deeds W:105). In 1880, the Russler household was comprised of Conrad, 35; Helga, 22; and their 7-month-old daughter, Sophie.

Structure 2, and probably the features and tailings on the drainage above the structure, must have been built by Banholzer. The tailings in the drainage are consistent with his listed occupation as a miner in 1870.

Structures 1 and Collapsed Frame Structure -- These structures are located on one of the earlier ranches in the Clarksville area. George Washington Hill, 32, was on the land by 1860, working as a miner. He lived with his wife, Mary, and children Emma and Edwin. The Hills sold their land to William Johnson, a 60-acre tract on the south side of the Giles Toll Road, in 1864 (Deeds I:428). In the following year, Johnson and his wife, Judith, filed a declaration of homestead on the same parcel (Homesteads B:241). In 1873, William Johnson filed another homestead declaration, possibly to clarify the previous claim and the establishment of a township grid. The claim for 80 acres, the northeast quarter of the southwest quarter, and the northwest quarter of the southeast quarter of section 1.

In 1870, Johnson was working as a teamster, with a value of $100 for his real estate. His family consisted of his wife and four children, ages 3 to 14.

Johnson's development of the land as a ranch must have occurred after 1870. By 1880, Johnson had switched to farming, working with his three sons. William Johnson's land included 80 acres of tilled land, with a farm value of $1500. His farm equipment was valued at $50. Livestock included 6 horses, 5 dairy cows, 10 other cows, 2 swine, and 84 chickens or other fowl, valued at a total of $500. He produced 100 pounds of butter in 1879. He had 20 acres of grasslands yielding 12 tons of hay and also had 4 acres of barley, with a yield of 40 bushels.

In 1899, William Johnson transfered his land to his daughter, Alice Strohecker. Strohecker's husband sold the land to Russler in the following year (Deeds 54:390; 55:136). Judith died in 1900, and William Johnson moved to Calaveras County to live with his daughter until his death in 1904 (Wooldridge 1931b:415).

The Russlers may have either moved into the existing Johnson house or built the frame house. The remnants of the house suggest a turn-of-the-century date of construction. In 1900, Conrad and Elizabeth Russler had five children, and probably needed a larger house. Conrad Russler died in 1913, and his widow remarried.

In 1922, Elizabeth Russler Best sold the land to Frank and Maria Walker (Deeds 96:345).

Tom Walker lived in the house for several years with his family. Cal McKinley, grandson of the Joergers (owners of Mormon Tavern) also lived in the house. It was abandoned about 30 years ago (Jess Tong, personal communication).

Structures 7, 8, 9, 10, 11, and 12 -- This group of structures lies along Carson Creek. They are situated in a portion of section 1, for which the earliest ownership is unclear. John Knighton filed a pre-emption notice for a 160-acre parcel northeast of Crocker's Ravine that would apparently include this area (Preemptions D:305). Other land records for about 1860 for the Mormon Hill Ranch reference Knighton's Ranch to the north of it (Deeds F:538). In the 1860 census, John Knighton, age 45, is listed as a miner in the Clarksville area. He is an English immigrant as was his wife, Eliza, 27. They had two children 7 and 5, both born in New York, indicating a possible occupation of the land by Knighton for no more than four years. One of the structures was probably constructed by Knighton, but it is impossible to distinguish which one it might be.

Knighton never filed for a homestead on the land and was gone from the area by 1867. The Rantz brothers were reportedly involved in the ranching business by about 1860 in El Dorado County, and they may simply have assumed ownership of Knighton's property. Some of the structures may represent the Rantzes' homes, and others may have been used for the hired help.

When Russi bought the land in 1880, he probably moved his family and hired men into the existing structures on the property. The family tradition is that the Russis had a home on Goat Hill (Agnes Walker Shinn, personal communication). The home may actually have been in the valley just beyond Goat Hill.

EDH-8

The cabin is shown on the 1866 map as "Crissy Cobb's house." Crissy Cobb can be identified as Christina Cobb, born in Massachusetts in about 1830 to 1834.

In 1859, William C. Josselyn sold the ranch he was occupying near the head of New York Ravine to Christina Cobb for $2000. Included in the sale were seven cows and seven calves, six yearlings and all their increase, one yoke of oxen, one bull, one mare colt, 44 hogs and their increase, and all their poultry on the ranch (Deeds E:74). Later in the same year, Josselyn filed a pre-emption notice on a 160-acre parcel also on New York Ravine (Preemptions B:349). This may have been adjoining land to north of the ranch.

In the 1860 census, Cobb was listed in a household with Josselyn, age 39; H.C. Josselyn, 24, probably William's brother; Thomas McVay, 24; and Andy Willis, 36. W. C. Josselyn was listed as a farmer with $2000 in real estate and $2000 in personal property. McVay and Willis were laborers, possibly employed on the ranch. H. C. Josselyn was listed as a miner, and no occupation is listed for Cobb. The $2000 value of real estate may be an error by the census taker, since the part of land had been transferred to Cobb by this time. It is also possible the transfer between Josselyn and Cobb may have been on paper only, possibly for tax purposes.

The special agricultural schedules for the census report that Josselyn held improved land valued at $2000. He also owned 1 horse, 2 asses or mules, 14 dairy cows, 2

oxen, 28 other cattle, 60 swine, with a total livestock value of $2000. This would be the $2000 in personal property claimed by Josselyn.

In 1865, Cobb filed a declaration of homestead on the land, probably to insure clear title. Her declaration described the ranch as:

> ...about (1½) one and one half mile north of the Town of Clarksville bounded on the north by the land of James Delaney, on the east by the land of G. Donahew, on the south by the land of M. Clifford and on the west by the land of G. C. Fitch and James Black, said tract of land containing 300 acres more of less, together with dwelling house, barn, outhouses and all appurtenances thereon or in anywise belong (Homesteads B:271).

At that point the acreage figure was just a rough estimate, but probably included an initial 160-acre claim plus the later 160 acres pre-empted by Josselyn. The transfer of the remaining land to Cobb is not recorded.

On October 25, 1866, Cobb was shot "near the hip" by a man named Huge (Hugh?) O'Neil at her ranch. On November 3, the Folsom Telegraph stated that her doctor had informed them she was gradually recovering, but on November 11 she died from the wound (San Francisco Bulletin, November 15, 1866; Mountain Democrat, November 17, 1866).

In order to pay her outstanding debts and to settle her estate, Cobb's real estate was sold at public auction in Clarksville. The Cobb Ranch of 320 acres was sold to the highest bidder, Antone Banholzer, for $400 (Deeds K:575). Banholzer, a native of Germany, in 1846 was 49 years old, and a farmer (1867 Great Register). Banholzer had a homestead about one mile south of the cabin, and probably did not occupy the land.

Ownership of the parcel is unclear for the following few years. By 1870, the ownership of at least the northwest quarter of section 36 (T10N R8E), the land containing the cabin, had been transferred to John Page (Deeds N:540), who was a boot and shoe maker in Clarksville (Langley 1867:125). Page sold the land to Thomas McConnell. Thomas McConnell owned large tracts of land in Nevada, northeastern Oregon, Sacramento County, and about 700 acres in El Dorado County. He raised sheep on his lands (Woolbridge 1931b:309-312). McConnell bought a number of parcels in the project area in the 1870s, obviously for additional range for his running sheep herds. His El Dorado County land was transferred to his son, George, in 1906 (Deeds 64:453). By 1925, the land had been acquired by Frank X. Walker (county map).

A small fragment of white ironstone was found during the survey. It contains a portion of a maker mark for the William Adams pottery. The pottery under this name operated from 1853 to 1865 (Praetzellis, Rivers and Schulz 1983:3). The date of manufacture closely corresponds to Cobb's occupation of the structure.

EDH-9

The site lies on lands held by Thomas McConnell and later by Francis X. Walker. The frame structures may have been built to house the sheepherders and to provide shelter for the animals. If so, the structures would only have been used seasonally.

The artifacts and construction materials suggest a date of about 1930, during the time Walker would have owned the land. Mrs. Agnes Walker Shinn, who grew up on the

ranch and lived there until about 1930, does not remember any one living on the outlying lands of the family ranch. Mrs. Richard Kimball, who grew up on the Campbell ranch, about a mile northwest of the site, does not remember anyone living in that area except possibly woodcutters.

EDH-10

This small cabin lies on lands that probably were a part of the Cobb ranch. In 1866, no cabin is shown, but the area was denoted as "mines," and a road led west from the site. Both Allegheny Creek and New York Ravine had been extensively worked. H. C. Josselyn, who lived with Crissy Cobb in 1860, was working as a miner, and this man could have been working the creeks within the ranch.

Even though the four men and Crissy Cobb were listed in the same household, it is possible that the two cabins were occupied contemporaneously. The cabin may have been constructed even before Josselyn and Cobb claimed the land in 1859.

EDH-11 (Historic Component)

The site lies in an area that was also shown as "mines" in 1866. The features in the creek represent the remnants of an early mill.

One of the earliest owners was James Delaney. In 1863, Delaney bought a 360-acre tract of land north and west of New York Ravine, together with all improvements, from Francis and George Helling (Deeds H:415). Since the cabin definitely lies on a parcel sold by Delaney in 1871, it might be assumed that it is on a portion of the parcel purchased from the Hellings. There is no record of how or when the Hellings acquired the land, but the mill and cabins probably were on the land prior to 1863.

By 1870, Delaney was living on another portion of his holdings. He was a farmer, age 36, and a native of Ireland. His real estate was valued at $700 and his personal estate at $400. He lived with Charles Harrold, a 66-year-old miner.

In 1871, Delaney sold the southwest quarter of the northwest quarter of section 25 (T10N R8E) to George Ricker (also Riger or Richer). Ricker, a miner, has a homestead one-quarter of a mile away in section 24 (Patents C:11), and owned the northwest quarter of the northwest quarter of section 25 (Deeds O:325). In 1880, Ricker sold the land to John Kerouel, a merchant and saloon-keeper in Clarksville (Deeds W:413). Several months later, Kerouel sold the parcel to McConnell, who undoubtedly used it for his herds of sheep.

All mining activity must have occurred before 1880. Since both Delaney and Ricker had other nearby residences, the hearths at the site probably relate to the period before 1871.

The historic period artifacts found at the site were fragmented discards from a bottle collector's excavations. None of the fragments are truly temporally diagnostic, but the black glass fragments date to pre-1880.

EDH-13

The site lies on lands claimed also by George Ricker. In 1871, Ricker bought the northwest quarter of the northwest quarter of section 25 from the CPRR (Deeds O:325). In 1880, the site is on a portion of the land sold to John Kerouel, and then transferred to McConnell (Deeds W:413,527).

As with EDH-11, the date of occupancy must pre-date the acquisition by McConnell in 1880. Its proximity to Allegheny Creek and EDH-11 suggests use by miners. The cabins are not mapped on the 1866 map. This may be due to their abandonment by this time or to their setting. The early surveyors followed the section lines and sketched in features and roads visible from their traverse line. EDH-13 lies in a protected stream terrace, in an area of dense vegetation. The main bend in the course of Allegheny Creek near the cabins is not shown, suggesting the surveyors did just guess at the stream's course from the north-south section line.

EDH-14

George Fitch was one of the earliest settlers in the Clarksville area. He filed a pre-emption claim for 160 acres on Bucks Flat in 1856, and received a patent for the land in 1869 (Preemptions C:439, Patents A:20). Fitch added to his holdings and, in 1880, he had 440 acres of improved lands valued at $3000. At this time, he owned 60 dairy cows and 95 other cattle, 10 horses, 5 swine, and 90 chickens, with a livestock value of $2800. Fitch produced 2000 pounds of butter and 50 tons of hay.

In 1866, Fitch's house was located on the road to Clarksville from the Coloma Road. Fitch was one of the charter members of the Clarksville Grange, chartered in 1874 (Sioli 1883:140).

In 1894, Fitch sold his holdings to Frank X. Walker and his wife, Louise. Walker's holdings totalled almost 480 acres. Walker, born in Switzerland in 1860, came to California in 1881. He worked in Sacramento, then went to work for Anton Russi, whose ranch lies on another portion of the project area. Walker worked for Russi until Russi's death seven years later. Subsequently, Walker married Mrs. Russi and took over the active management of the ranch (Wooldridge 1931a:312). The Walkers had three children, one of whom is Agnes Walker Shinn, born in 1900.

Mrs. Shinn was born in a white, three-bedroom house that stood to the west of EDH-14. This may have been Fitch's house. When Mrs. Shinn was 13, her father built the large house at EDH-14. The house had several additions through time (Agnes Walker Shinn, personal communication).

Frank Walker acquired much of the land in the project area and, by 1931, his holdings totaled 2800 acres at Lake Tahoe. In the earlier years, he ran a dairy operation, but in later years he confined his attention to raising cattle and sheep (Wooldridge 1931a:312-315).

Charles "Tom" Walker, the oldest of the Walker children, was born in 1893. He was raised on the ranch and eventually took over active management of the ranch (Wooldridge 1931b:31).

Under Tom Walker's mismanagement, ownership of the family ranch was lost in the late 1930s (Agnes Shinn, personal communication). Some of the later residents of the home were the Faustino Silva family. Silva, who lived there in the 1940s, stuccoed the exterior of the house (Jess Tong, personal communication).

EDH-15

The site lies along an old roadway (1866) and is located on the land purchased by James Delaney in 1863 from Francis and George Helling (Book H:415). In 1870, the census taker's next stop after the G. Fitch family was Delaney's house, then to Oakleys in the southwest quarter of section 30 (T10N R9E). Following the road that existed in 1866 from Fitch's to Oakley's, EDH-15 would most likely have been Delaney's home.

In 1880, Delaney's holdings are reported in the special schedules for the census. He owned 50 acres of tilled land, 140 acres of other improved land, with 100 acres of woodland and forest. Delaney's ranch was valued at $1000 and his farming implements and machinery at $60. He had $175 in livestock, including 4 horses, 1 milk cow, 4 other cattle, 4 swine, and 15 chickens. Delaney estimated he had spent $200 on building and repairing fences in 1879. A laborer was hired for 20 weeks of the year at a cost of $175, and Delaney shared quarters with his hired man. Part of the work included the mowing of 20 acres that yielded 20 tons of hay.

Delaney apparently lived on the land until his death in 1899. In 1896, he was registered to vote in the Wing's Store precinct. As his residence was more adjacent to Green Valley Road, his ties were probably always closer to that area rather than to Clarksville. He is listed in the 1884-5 directory under Clarksville.

Delaney apparently never married. There is an Edward Delaney, age 28, listed in the 1896 Great Register in the Wing's Store precinct. This Delaney served as the administrator for the estate of James Delaney, and he may have been a nephew (Deeds 54:585).

On January 14, 1899, the Delaney land was sold to Mrs. Ann McNamee of Folsom. Included in the sale was "all personal property of every kind and description and wheresoever found (Deeds 50:423)." There must have been some problem with the sale, since the same land was sold at public auction in 1900 to settle James Delaney's estate. The land was sold to George Dixon for $1770 (Deeds 54:585).

Dixon had other land nearby near Green Valley Road, and it is doubtful whether he would have lived on the old Delaney land parcel. Dixon owned this land until at least as late as 1925.

The cabin (EDH-15) is of semisubterranean design, a typical mode of Irish construction. Peak & Associates, Inc., excavated a similar cabin in Sacramento County, built by an Irish immigrant in the 1860s (Peak and Peak 1979).

EDH-16

This hearth also lies on Delaney's property. It is very similar in construction to the hearths at EDH-11. The hearth may be the remnant of a miner's cabin and probably predates Delaney's occupation of the land in 1863. Delaney had no family and, by the

standards of the times, would have had ample room for another individual to live in his cabin. In both 1870 and 1880, his hired man was listed in the same residence with Delaney, suggesting that this was indeed the case. The cabin was probably not even extant in 1870.

EDH-17

The site lies along the early road through the section. The land belonged to George Donahue; by 1870, his widow owned the land. She and her three children probably lived in one of the cabins in section 31 (T10N R9E). In 1880, Mrs. Donahue and her son, George, 28, lived with a couple and their two children. The son was employed herding cattle. The family may still have been living in a cabin on Donahue's land. In the 1884-5 directory, Mrs. Donahue was listed as the owner of the 160 acres and a "ranchero." George Donahue was also listed as a ranchero. Mrs. Donahue may actually have been leasing her land out for cattle or sheep range. She was not listed in the special agriculture census in 1880, although many small farmers and ranchers were listed. Mrs. Donahue owned the land until at least 1895; but, by 1908, the land had been sold to Frank Walker.

The rock alignments and fence lines probably date to Donahue's ownership. If the land were leased to others, the shelters might have served and been necessary for temporary accommodations while away from the main ranch.

EDH-22

The site is the remnant of a root cellar associated with a house built on the nearby parcel in 1884 by Grant G. Campbell. The earliest recorded owner of the land was Delano Eckles Gilbert, born about 1830 in Indiana (Great Register 1867). In 1869, Gilbert sold the land to Ebenezer Fairchild, a blacksmith, born in Indiana in 1823. Fairchild built a cabin on the land and, in 1870, was recorded as working as a farmer and living with Ah Shen, a Chinese cook. Fairchild's niece, Matilda, travelled to the property to keep house for him. She met Grant Campbell, possibly a laborer on Fairchild's farm, and married him in 1884. Fairchild sold Campbell 280 acres of the ranch in 1884 (Deeds M:112, 113; Armand Kimball, personal communication). The family home was built sometime in the next few years, prior to 1887, and the root cellar was obviously constructed during this era.

The home and ranch remained in the Campbell family ownership. Grant Campbell died in 1899 and Fairchild in 1902 and, in 1951, the home burned. Some of the ashes were deposited in the long abandoned root cellar. This root cellar was much later excavated in part by Armand Kimball, great-grandson of Grant Campbell. The doorway was toward the creek, and it measured about 10 feet wide by about 12 feet.

The artifacts found are consistent with the estimated 1880s to early 1900s period of use.

EDH-23, EDH-24, and EDH-28

All three sites lie on the lands owned by James Delaney. Delaney had bought the land from Francis and George Helling (Deeds H:415). There is no record of how the Hellings acquired the land.

In 1871, Delaney bought the southwest quarter of the northeast quarter of section 25 (T10N R8E) from the Central Pacific Railroad for $100. All three of the structures lie within this 40-acre parcel. Delaney may have been running his cattle on the land prior to this date. He may have been forced to buy it from the railroad to clear title because he did not live on the parcel, and could not prove a prior claim to the land. This transaction wan not recorded until 1877 (Deeds I:567).

This land remained a part of Delaney's holdings until his death in 1899. In 1900, it was purchased by George Dixon at a public auction (Deeds 54:585).

The cabins must pre-date Delaney's occupancy of the land. The drainage on which the structures are located has been extensively mined, and the cabins undoubtedly relate to this early use of the land.

EDH-25

This cabin site location corresponds with the house indicated in section 1 on the 1866 General Land Office plat for T10N R9E (Map 7). This is probably the Donahue's house (see EDH-2).

In 1860, the Donahue's household consisted of George, 51, and Teresa, 41, daughters Ellen,Mary, Caroline, Tissa, and Ada, ages 15, 13, 10, 4, and 7 months, and a 6-year-old son, George. The three youngest children were born in California. By 1870, George Donahue has died, and only three children remain in the household.

The cabin is actually on the lands that are sold by the CPRR to Catherine Zimmerman. Mrs. Donahue keeps the quarter section to the west. In 1880, her son George is occupied as a cattle herder and lives in the household next to his mother's with a couple and their two children (see EDH-17). Mrs. Donahue may have remained in EDH-25, and her son may have occupied nearby EDH-2. Mrs. Donahue owned the adjacent parcel until at least 1895, and may have lived in the cabin until her death.

EDH-29

The Tong family settled in the Clarksville area in 1855. Hezekiah and Margaret Tong took up land to the north and east of the town. They improved the road, established a toll gate, and conducted a hostelery called Railroad House (Wooldridge 1931b:468). The Tongs also mined and ran cattle on their land.

When the town of Clarksville was organized in 1873, the Tongs claimed six of the lots in town. Through time, the Tongs remained the prominent family in the community, with Gilbert S. Tong serving as postmaster and justice of the peace, and William W. Tong also as postmaster (Wooldridge 1931b:468; McKenney 1879:397).

The Tong family has maintained their cemetery and plan to continue to inter family members there.

The dates of construction and operation of the mine, mill site, and associated reservoir are unknown. Jess Tong recalls that the site had not been abandoned too long before the time of his brother's recollections (about 70 years ago). He reported that the mill's machinery was sold to Bob Craig and moved to another site.

Unfortunately, the site is within the township that was mapped by the General Land Office in 1858, and little detail is recorded within the sections. The land always belonged to the Tong family, and they may have leased it to others. Jess Tong did not remember a family association of the initiation or working of the mine.

The cabin on the west side of the creek was reportedly occupied in conjunction with the operation of the mine and mill. The small holding pond/reservoir on the hill above the mill is undoubtedly related to the mill's operation. As Carson Creek is almost totally dry in the summer and fall, another water source would be necessary for milling during the dry season.

Hall/Richmond Cemetery

A 1939 Department of Transportation map was found showing the proposed alignment of U.S. 50. The map indicates a plot with the notation "Indian Graves" on the north side of the highway. The 1965 D.O.T. map overlaid on the 1939 map indicates that the cemetery lies within the strip of land between the westbound lanes of the highway and Tong Road. Peak & Associates, Inc., have prepared a map to indicate the relationship of the proposed Silva Valley interchange and the "Indian Graves."

An interview was conducted with Mr. Jess Tong, who identified the cemetery as a pioneer cemetery -- not an Indian cemetery. The cemetery lies on the edge of what was the Richmond and later the Hall property. William Hall died in 1930 at the age of 86 in the County Hospital (Burial Permit 1338, on file with the County Recorder). Albert Fitch, who lived on the parcel to the north, had been deeded Hall's property, with the provision that he be responsible for Hall's burial when necessary. Hall had gone blind and had been in Placerville for eight years. Mr. Tong recalls that Fitch went to Placerville with his Model T truck and brought the body back in a county-supplied pine box, covered with an old army blanket. The highway ran through town, and a couple of boys in town went over to the grave site. The grave had been dug by Bill Leaky and Al Griggs. Mr. Tong remembers that the grave was near the graves of Alex and Lucy Richmond, and two other graves. There were no tombstones, but the graves were ringed with rock and one had a large quartz boulder on one end. No service was conducted for Hall.

Tong recalls the day as being extremely hot. Since the burial permit indicates the date of death as August 5, Mr. Tong's boyhood recollection might be regarded as very accurate.

A bull pastured in the field dug up the grave several days later. Jess Tong and his friend, Albert Griggs, went to view the grave, and the horrifying sight caused the boys to rush back home. No tombstone was ever installed on Hall's grave.

The 1939 D.O.T. surveyors apparently found the rock rings on the hillside above the highway, and recognized them as graves. They erroneously labelled this area as "Indian Graves," either based on prior field experiences with Indian sites or because of the proximity of the two cemeteries on the south side of the highway.

During the 1965 construction of the additional highway lanes and Tong Road, the cemetery had brush piled on it. Some of the construction equipment was parked on the cemetery. After the completion of the construction, the brush was burned. Some bulldozing in the cemetery area may have occurred, obliterating surface evidence of the graves.

Tong took Melinda Peak to the cemetery site. Although he could not positively point out the exact boundaries of the cemetery, he was able to point out the site to the best of his recollection. It lies on the side of the hill, to the east of the 1939 mapped location. There are several large stones on the ground surface that have been brought onto the site. They may be the disturbed remnants of the rock rings. Tong marked the four corners of the area believed to be the cemetery.

RECOMMENDATIONS

General

There is a possibility that a site may exist and be obscured by vegetation duff or historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for on-the-spot evaluation. If the bone appears to be human, the El Dorado County Coroner and the Native American Heritage Commission (916-322-7791) must be contacted.

Table 3 presents a survey of site types by number and the specific impact proposed for each site.

ED-1, EDH-3, -6, -7, -12, -18, -19, -20 and -27

All nine sites are small loci used for processing food. EDH-3 also has a small section of a historic rock wall recorded with it. The sites have been completely photographed and recorded, and no further research value, and simply represent physical evidence of Native American use of the area. Preservation of the sites is preferable --but not essential. If possible, the boulders should be left in place within individual lots, the open space, or on the golf course. Should the mortars lie within proposed roadways or on structural sites, the boulders could be relocated onto the parcels. The presence of the bedrock mortars could be an enhancement to a lot for a landowner with an interest in the prehistory/history of the area.

ED-2 (Prehistoric Component)

The bedrock mortars have been completely recorded, and no further work is necessary for the prehistoric component of the site. The above recommendations apply.

EDH-11 (Prehistoric Component)

The prehistoric component of the site lies on a terrace above a proposed lake. Due to the scale of the maps, it is difficult to tell whether this area is in a proposed open space or residential use zone.

As a condition of approval of specific plan, the generalized location of the prehistoric component should be recorded on the deed for the property.

Alternative 1 (No Project) -- This is, by law, a mandatory recommendation on each and every project that has cultural resources within direct impact zones and/or within secondary areas of impact. This alternative would afford no protection to these resources

TABLE 3 - PROPOSED IMPACTS

SITE #	PREHISTORIC MIDDEN	PREHISTORIC BRM	HISTORIC IC/S	HISTORIC M/RC	HISTORIC OTHER	PROPOSED USE RESI	PROPOSED USE GOLF	PROPOSED USE OPEN	PROPOSED USE ROADS	PROPOSED USE VILL	PROPOSED USE LAKE
ED-1		X				X					
ED-2		X	X				X				
EDH-1				X		X			X		
EDH-2				X		X	X				X
EDH-3		X			X		X				
EDH-4				X			X				
EDH-5		X		X		X	X	X	X		X
EDH-6		X				X					
EDH-7		X				X					
EDH-8			X				X				
EDH-9				X		X					
EDH-10			X			X					
EDH-11	X			X		X		X			X
EDH-12		X						X			
EDH-13				X				X			
EDH-14			X							X	
EDH-15			X		X		X				
EDH-16			X		X		X				
EDH-17				X		X					
EDH-18		X				X					
EDH-19		X				X					
EDH-20		X				X					
EDH-21	X	X				X					
EDH-22			X			X					
EDH-23		X	X					X			
EDH-24			X					X			
EDH-25			X				X				
EDH-26		X						X			
EDH-27		X						X			
EDH-28			X					X			
EDH-29		X		X	X				X		
CC					X	X					
HRC					X				X		

KEY: **BRM** = Bedrock Mortar; **IC/S** = Isolated Cabin/Structure; **M/RC** = Mining/Ranching Complex; **Resi** = Residential; **Golf** = Golf Course; **Open** = Open Space; **Vill** = Village Green; **CC** = Clarksville Cemetery; **HRC** = Hall/Richmond Cemetery

as the development of surrounding parcels will cause increased ingress to the project area, increasing the likelihood of vandalism.

Alternative 2 -- Cultural resources must be evaluated with respect to their eligibility to the National Register of Historic Places. The criteria used to evaluate historic and prehistoric sites in evaluating potential to the National Register are as follows:

> The quality of significance in American history, architecture, archeology and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded or may be likely to yield information important in prehistory or history.
>
> Ordinarily, cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past fifty years shall not be considered eligible for the National Register.

The prehistoric site is potentially eligible to the National Register under Criterion D: surface data is inadequate to assess the potential for the site to provide data important in understanding the prehistory of the area. A test excavation of the site is proposed.

A test excavation is basically the methodical digging of a limited number of 1- by 1-meter units in 10cm increments to determine: 1) the depth of the cultural deposit; 2) the cultural contents of the site in terms of kinds and numerical quantity; 3) presence of a faunal constituent; and 4) presence of time-sensitive artifacts that could be analyzed and compared with artifacts from other sites that have had a temporal sequence established; and 5) the potential of the site to address pertinent regional research questions.

It is recommended that a minimum of four 1- by 1-meter units be excavated at the midden area of EDH-11. The data yielded by such test excavations would reveal whether further mitigative measures should be taken, such as site protection or data recovery excavations. The test excavations may also prove to be an adequate sample of the site and allow total land usage of this area, regardless of the proposed impact.

The test excavation should take place as a condition of approval of the tentative subdivision maps for I, K, L, and M, the subdivisions that surround the site. Any further mitigative measures should be undertaken in consultation with the El Dorado County Planning Department.

EDH-11 (Historic Component)

Test excavations are advised to determine the presence of historic cultural materials. These excavations should be required as conditions of approval for the tentative subdivision maps. Any further mitigative measures required should be undertaken, in consultation with the County Planning Department.

EDH-1, -9, -14, -17, and -22

All of these sites have been recorded and documented as to their date of construction, time of occupancy, and use. All lack integrity, and could not provide information important in history. Therefore, the sites have no research value, and no further work is necessary. Development can proceed in these areas with no restrictions.

ED-2 (Historic Component), EDH-2, EDH-4, and EDH-25

As a condition of approval for the tentative maps for subdivisions F and G and adjacent golf course, test excavations should be undertaken to determine the presence, nature, and extent of subsurface archeological materials. Based on the results of the test, further mitigational measures may be necessary. These should be undertaken in consultation with the County Planning Department.

EDH-5 (Ditch and Road)

These features have been totally recorded and documented. No further work is necessary. If possible, the rock sections of both features should be preserved.

EDH-5 (Structures)

All of the structures listed below need to have text excavations to determine the presence, nature, and extent of subsurface cultural materials. The test should be undertaken prior to the approval of the listed subdivision(s) and adjacent open space or golf courses in which the structures lie. Any further studies that may be required to mitigate adverse effects should be conducted in consultation with the El Dorado County Planning Department.

Structure 1A	Subdivision A
Structure 2	Subdivision C
Structures 3, 4	Subdivision C
Structures 5, 6, 7, 8, 9, 10, 11, 12	Subdivision C
Structures 13, 14, 15	Subdivisions C, E

EDH-8

As a condition of approval of the tentative map for the Country Club, subdivisions H and I, and adjacent gold course, the site should be test excavated to determine if subsurface archeological materials exist. Based on the results of this test, further mitigational measures may be deemed necessary and should be undertaken in consultation with the County Planning Department.

EDH-13

The site lies at the edge of subdivision M. Before the tentative map is approved, test excavations of the structures should be conducted to determine whether the site contains subsurface materials. Additional work may be required to mitigate the resource, and this should be undertaken in consultation with the County Planning Department.

EDH-15

The site lies at the edge of the proposed gold course and subdivision K. Again, excavations should be conducted to determine the nature and extent of any subsurface materials. In addition, the style of structure and construction technique should be examined. Detailed scale drawings of the cabin should be made in conjunction with the excavations. These tasks should be conducted as a condition of approval of the tentative map for Subdivision K. Based on the results of this study, further mitigational measures may be required, and these should be undertaken in consultation with the County Planning Department.

EDH-10 and EDH-16

EDH-10 and EDH-16 are surface features only that have been completely recorded. Nothing could be found to document who or when the site was occupied. But, as the site lacks any subsurface deposit, no further work could provide additional information important in history. If possible, the features should be preserved. No other work is necessary.

EDH-21

The portion of the site that lies on El Dorado Investors' lands consists of two bedrock mortar outcrops. These have been completely recorded and no further work is necessary. If possible, the site should be preserved.

If a land use change occurs for the parcel containing the remainder of the site, the midden and bedrock mortars should be recorded and a complete field survey conducted. Test excavations will be necessary to determine the extent, nature, and depth of deposit. Further mitigation, such as data recovery or capping of the site, may be required.

EDH-23, EDH-24, and EDH-28

All three structures lie in the proposed open space. The three structures need to have test excavations conducted to determine the presence, nature, and extent of subsurface cultural materials. The test should be undertaken prior to the approval of Subdivisions L, M, and K. Any further studies that may be required to mitigate adverse effects should be conducted in consultation with the El Dorado County Planning Department.

EDH-26

This site, although primarily a bedrock mortar site, also contains rock art. Rock art has associated magico-religious significance to the Indian people. Since the modern Nisenan people have particular concerns about this type of site, preservation in place is essential for the rock art, even though the site has been completely recorded. The planned road through the open space area should be designed to avoid this site. All construction impacts should also be avoided. If this site cannot be protected, it may be necessary to contact local Native American people and discuss their concerns regarding this site.

EDH-29

Tong Cemetery -- The cemetery is much larger than the area presently fenced off. Many graves are not marked. The cemetery covers the hilltop, extending to the existing CalTrans right-of-way. The freeway on-ramp must be designed to avoid any impact to this area. As the zone of potential construction impact is usually much larger than the structure itself, this large area should be considered in the planning process. If all potential impacts, including but not limited to cutting, filling, yarding of equipment and materials, construction access, and ingress by construction personnel, cannot be avoided, the on-ramp should be relocated.

Other Historic Features -- If construction cannot be planned to avoid these, additional research may be necessary to identify these features and to assist in establishing their significance. Test excavations may be necessary to determine the presence, extent, and nature of any subsurface cultural materials.

Bedrock Mortar Station -- No further work is necessary. The feature has been completely recorded.

Clarksville Cemetery

The boundaries of the cemetery are well-established. The parcel lies at the boundary of a commercial use and residential use area. California law requires that access to a cemetery be provided, and as long as there are provisions for access through even the commercial or residential areas, no further recommendations are necessary.

Hall/Richmond Cemetery

Based on the specific land use planned, there are several options possible for the site. One possibility would be to record the location of the cemetery on the deed for the parcel, then to protect the cemetery either through fencing, project design, carefully-emplaced fill, or some combination of these methods. Another option might be the disinterment of the graves and relocation to another cemetery.

Isolated Features

The recorded isolated features include three bedrock mortar station, with one shallow cup each, 20 rock fence lines/walls, three improved roadbeds, three mining

features, a dam, a lambing pen, and a small rock feature, probably the remnants of a camp fire circle. The features have been totally recorded, and no further work is necessary. If possible, the rock walls and bedrock mortars should be incorporated into the project design and retained. Again, individuals, landowners and local residents with an interest in the prehistory/history of the area may find these features to be an enhancement.

Appendix H

AIR QUALITY METHODOLOGY AND ASSUMPTIONS

CALINE-3 MODELING

The CALINE-3 model is a third-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway (California Department of Transportation 1979). Given source strength, meteorology, site geometry, and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway. The CALINE-3 model allows roadways to be broken into multiple links that can vary in traffic volume, emission rates, height, width, etc. Four intersections and one interchange were selected for analysis with the CALINE model. Intersections were modeled with free-flowing segments and a 300-meter-long idling segment for each approach. The intersection model extended 1,000 meters in all directions. The El Dorado Hills Boulevard. and U. S. Highway 50 interchange was also modeled, with freeway segments extending 2,000 meters in either direction from the interchange.

For the intersection analyses, receptors (locations where the model calculates concentrations) were located at a distance of 10 meters from the roadway edge for all four corners of the intersection. For the interchange analysis, receptors were located between each leg of the interchange at the approximate edge of the freeway right-of-way.

The wind direction was varied in 15 degree intervals around the entire compass. Emission factors were derived from the California Air Resources Board EMFAC-6C computer model. Adjustments were made for vehicle mix and hot start/cold start/hot stabilized percentages appropriate to each roadway. Temperature was assumed to be 35° F.

The computation of carbon monoxide levels assumed the following worst-case meteorological conditions:

Windspeed: 1 mps
Stability: Pasquill E
Mixing Height: 100 meters
Surface Roughness: 280 cm

The wind direction was varied at 15-degree intervals around the compass, for a total of 24 wind directions. To estimate the peak 8-hour concentration, the estimated 1-hour maximum concentration was multiplied by 67 percent. This persistence factor was obtained by taking the ratio of the average second-highest

1-hour and 8-hour measured carbon monoxide concentrations for the closest monitoring location (Citrus Heights) during 1983-1985.

The CALINE-3 model calculates the local contribution of nearby roads to the total concentration. The other contribution is the background level attributed to more distant traffic. The 1-hour background level was estimated at 7 ppm. The closest station at Citrus Heights had levels of 8-9 ppm; 7 ppm was selected as conservative.

Appendix I

Mitigation Measures Required by County Policy

Appendix I

Land Use

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals and policies.

General Goals

- Goal A: The citizens of the Plan Area desire to retain the rural atmosphere while striving for a well-balanced community.

- Goal B: Local planning efforts should include an integrated, comprehensive community plan that ensures functional, healthy, and aesthetically pleasing land uses.

- Goal D: Retention of a feeling of open space is desired through provision of open space areas and consideration of viewsheds, ridgelines, and natural features.

- Goal E: Future development should consider the compatibility of land uses, scenic corridors and retention of basic natural and physical features of the community.

- Goal F: Future residential development should be compatible with existing concepts.

- Goal H: Residential, commercial, and industrial land uses should be provided in a suitable area where existing developments are not adversely affected.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services areas.

- Policy 2: Transitional land uses shall be designed into development projects in order to alleviate land use conflicts in differing residential density areas,

commercial, industrial, and agricultural areas. Typical transitions may consist of:

a. Section 17.06.150, Special Setbacks for Agricultural Protection;
b. Landscape areas;

c. Densities between residential developments that blend existing development with the proposed density;

d. Use of natural terrain and vegetation to separate incompatible land uses.

- Policy 8: Those lands identified on the Long Range Plan as agricultural lands shall be protected from conflicting land uses by the total implementation of the adopted Agricultural Buffer Ordinance.

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  - Limiting densities and lot configurations which do not provide adequate open space and recreational areas.

Residential Policies

- Policy 2: Residential developments in urban areas shall be developed as "villages" similar to the existing ones;

  a. Projects will be internally focused;

  b. Circulation shall be planned to enhance "village" identity.

- Policy 3: Within the high density land use designation, a maximum of three units to the acre shall be allowed unless accompanied by a planned development, in which case five units to the acre will be permitted.

Commercial Policies

- Policy 1: El Dorado Hills Boulevard/U. S. Highway 50 intersection shall be the major commercial center for the Plan Area.

- Policy 2: Expansion of commercial land uses, beyond what is shown on the land use map, shall be considered when accompanied with a specific development plan and a projected need has been demonstrated.

- Policy 4: Proposed new commercial development within 1 mile of a school site shall require notification to the school district.

Population, Housing and Employment

Mitigation Measures Required by County Policy. None.

Water

Mitigation Measures Required by County Policy or State Law. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps, and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

- Policy 9: All parcels 1 acre in size or less shall be required to be supplied with both public water and sewer service. This policy shall only apply to those lands located within the El Dorado Hills portion of this land use plan.

- Policy 10: All those areas generally planned for high intensity use (commercial, industrial, single-family residential - high density, and multi-family residential) shall not be rezoned until such time as a commitment for the required services for the requested zoning (e.g., public water and sewer) can be secured from the appropriate agency.

Residential Policies

- Policy 1: Public water and sewer shall be required for high density and multi-family residential development.

- Policy 5: Commercial land uses shall be required to have public water and sewer.

Mitigation Measures

1. Improvement of the EID water and sewer system through assessment districts and other means should make provisions for adequate service within the life span of the Plan.

2. A water-sewer service capability report is required by the county to accompany preliminary developments in order to assess project feasibility.

Wastewater

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps, and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

- Policy 9: All parcels 1 acre in size or less shall be required to be supplied with both public water and sewer service. This policy shall only apply to those lands

located within the El Dorado Hills portion of this land use plan.

- Policy 10: All those areas generally planned for high intensity use (commercial, industrial, single-family residential - high density, and multi-family residential) shall not be rezoned until such time as a commitment for the required services for the requested zoning (e.g., public water and sewer) can be secured from the appropriate agency.

Residential Policies

- Policy 1: Public water and sewer shall be required for high density and multi-family residential development.

- Policy 5: Commercial land uses shall be required to have public water and sewer.

Mitigation Measures

1. Improvement of the EID water and sewer system through assessment districts and other means should make provisions for adequate service within the life span of the Plan.

2. A water-sewer service capability report is required by the county to accompany preliminary developments in order to assess project feasibility.

Solid Waste

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals and policies.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate

capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

Law Enforcement

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

- Goal K: Effective emergency and fire protection service is a high priority.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

Mitigation Measures

1. Security systems, such as alarms connected into the county Central Dispatch, and security lighting, should be considered in industrial and commercial development.

2. Major commercial and industrial projects should contact the Sheriff's Crime Prevention Officer for security-related suggestions.

Fire Protection

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

- Goal K: Effective emergency and fire protection service is a high priority.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

Mitigation Measures

1. Appropriate mitigation measures should be provided to fire protection districts at the time of development, including, but not limited to, fire station site and mitigation fees.

2. The construction of a second fire station north of Green Valley Road will reduce response times and improve service to El Dorado Hills County Water District.

3. For all development proposals, fire defense improvements should be determined by the district fire chief.

4. Areas rated as "moderate" or "extreme" fire hazard should be pre-planned to offset adverse impacts.

5. Areas not currently within a fire district should be annexed prior to development.

6. Adequate circulation and water supply should be provided during development in order to offset fire hazards.

7. The county should establish a community development service area to fund capital improvements for fire defense improvements.

Schools

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows, and that new services and facilities will be developed for future development.

- Goal N: Quality neighborhood school sites are a priority to local citizens and should be considered as the area grows.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps, and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 4: Public facilities shall be considered in light of future development and growth within the Plan Area. Public use facilities, including but not limited to, will be school sites, public buildings, "park 'n ride" lots, etc.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

Commercial Policies

- Policy 4: Proposed new commercial development within 1 mile of a school site shall require notification to the school district.

Mitigation Measures

1. Mitigation measures will be provided to school districts in order to relieve impacts created by residential development.

2. Generalized school sites will be indicated for school districts on the Land Use map to indicate future locations.

3. School sites will be reserved at the request of districts for residential development in accordance with the Subdivision Map Act.

4. State funding, including, but not limited to Leroy Greene Funds, may be provided to districts.

5. The school bedroom fees should be utilized to purchase additional classrooms.

6. The county should establish a community development services area to fund capital improvements for school construction.

7. Future school sites in the Buckeye Union School District should be located adjacent to or in close proximity to existing district school sites whenever possible.

Parks and Recreation

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high levels of services provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in

light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 6: Urban-designated land uses within the boundaries of EID Assessment District #3 shall be held in an RE-10 zoning category until the density category, as shown on the Area Plan, has a commitment for the required services from the appropriate agency.

Recreation Policies

- Policy 1: The El Dorado Hills Community Service District Recreation Master Plan and the El Dorado County Recreation Element of the General Plan shall be the guideline for future park and trail developments.

- Policy 2: A regional park should be developed in the future, east of El Dorado Hills Boulevard, south of the SMUD utilities easement.

Mitigation Measures

1. The El Dorado Hills Community Services District will manage park facilities and provide recreation programs.

2. Land or fee dedications will be made to the El Dorado Hills Community Services District as established by state law, county ordinance, and community service district standards.

3. Park site dedications and facility needs for the El Dorado Hills Community Service District will be governed by the Recreational Facilities Master Plan.

4. Proposed park sites will be shown on the Land Use map for inclusion into future development, as determined by the El Dorado Hills Community Services District.

5. Daily use fees should be collected as determined by local and state recreation activities.

6. Bicycle and recreation paths indicated on the Land Use map should be incorporated into development and construction.

7. The county Recreation Element should provide a guideline for areas outside of the El Dorado Hills Community Service District.

8. Coordination with local school districts in order to maximize facilities as well as provide overall efficiency.

Gas and Electric

Mitigation Measures Required by County Policy

The following mitigation measures are incorporated by the EDH-SF Area Plan goals.

Community Goals

- Goal J: Efficient energy usage and conservation should be consistently encouraged in development.

Transportation

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal I: Review of development should ensure that high LOS provided in the past are perpetuated as the area grows and that new services and facilities will be developed for future development.

- Goal L: A quality circulation system, which safely and efficiently accommodates development and recognizes all transportation modes, is desired for the Area.

General Policies

- Policy 1: "General Plan Amendments, Rezonings, Subdivisions, Parcel Maps and Special Use Permits," hereinafter referred to as "developments," shall be considered in light of presently available or projected required public utilities and public service capabilities. Subdivisions, parcel maps, and special use permits may be approved upon the determination that adequate capacity is available or projected in all required public utilities and public services.

- Policy 4: Public facilities shall be considered in light of future development and growth within the Plan Area. Public use facilities, including but not limited to, will be school sites, public buildings, "park 'n ride" lots, etc.

- Policy 5: The Plan has large areas designated for future urban development. These areas may be developed

concurrently with the formation of the assessment districts to provide necessary public services. Developers may enter into development agreements with the County in order to meet the objectives of the Area Plan.

- Policy 11: Prior to high density development occurring, which will use Bass Lake Road as its primary access, a road improvement district shall be formed. The purpose of this road improvement district will be to generate funds for the necessary improvements needed to support the projected traffic use on Bass Lake Road, south to U. S. Highway 50, as outlined within the Land Use Plan.

- Policy 12: To ensure a sufficient vehicular and pedestrian system on commercial, industrial, and multi-family properties, all developments within this land use category shall be required to either improve street frontage, dedicate land for right-of-way, or provide a combination of the above prior to or in conjunction with a site plan approval for issuance of a building permit. Standards shall be developed by the county and be on file at the Planning Department.

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  d. Limiting design placement of roadways which create blind and/or dangerous intersections, or which increase hazards for vehicular traffic.

Residential Policies

- Policy 2: Residential developments in urban areas shall be developed as "villages" similar to the existing ones:

  a. Projects will be internally focused;

  b. Circulation shall be planned to enhance "village" identity.

Commercial Policies

- Policy 3: Circulation within a commercial development shall be designed to be internal with minimal encroachments on the public thoroughfares.

Circulation Policies

- Policy 1: Future road extensions outlined on the Land Use map shall be constructed as areas develop.

- Policy 2: A traffic circulation study shall be prepared and implemented for the Plan Area which considers the land uses adopted by this Plan.

- Policy 3: A specific traffic study shall be prepared for El Dorado Hills, Francisco Drive and Green Valley Road. "Area of Benefit" type districts shall be considered, along with other means of financing which may be available, to accomplish those recommended improvements as identified with the study.

- Policy 4: Transportation alternatives, which are cost effective, shall be strongly encouraged. A transit system linking employment and shopping areas with residential areas should be studied as the area grows. El Dorado Hills Boulevard and U. S. Highway 50 shall be designated Transportation Corridors.

- Policy 5: Bus stops shall be considered for inclusion into new developments.

- Policy 6: Potential "park 'n ride" lots, as identified on the land use map, shall be considered with the development of those parcels.

Mitigation Measures

1. The recommended improvements outlined in the EDH-SF Area Plan should be performed as the area grows.

2. An "area of benefit" should be established to cover all or part of the Area Plan to finance the recommended improvements.

3. Assessment districts should be used to finance specific improvements such as highway improvements.

4. Effective traffic management will provide maximum utilization of existing roads.

5. The circulation development policies will be followed by the county to implement the Area Plan.

6. Periodic maintenance of roads will increase their utility and extend their useful life span.

7. Further encroachments to major roads should be limited to major thoroughfares.

8. Transit programs should be expanded as needed for the local population and commuters.

9. Bicycle paths indicated on the Land Use map should be constructed in the future.

10. Looped road systems should be constructed and future roads indicated on the Land Use map should be completed.

Air Quality

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals and mitigation measures.

Community Goals

- Goal C: The integrity of the environment, quality of air, water, and noise levels should be considered a priority in all development.

Mitigation Measures

1. Alternative transportation including carpooling, transit service, bicycles and pedestrian will be encouraged to assist in reducing vehicular trips.

2. The El Dorado County Air Pollution Control office has regulatory authority over stationary sources of air pollutants.

3. Implementation of the El Dorado County Non-Attainment Plan will offset emissions and monitor contaminants.

4. State emission standards will offset air quality degradation.

5. Effective traffic management is encouraged in order to relieve congestion and increase traffic efficiency.

6. Recommendations of the Department of Public Works and El Dorado Resource Conservation District should be followed to reduce dust generated from construction.

Noise

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal C: The integrity of the environment, quality of air, water, and noise levels should be considered a priority in all development.

General Policies.

- o Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  h. Requiring commercial and industrial subdivisions, complexes, and structures to include adequate landscaping and noise attenuation systems to reduce related business noise and provide a harmonious setting.

Commercial Policies

- o Policy 6: Commercial subdivisions, complexes, and structures shall be required to include adequate landscaping and noise attenuation systems to reduce related business noise and provide a harmonious setting.

Mitigation Measures

1. The industrial zoning ordinance requires a Special Use Permit and specific consideration by the Planning Commission where noise is emitted beyond property lines.

2. Sound attenuation measures such as architecture and landscaping should be incorporated into land developments in high noise areas.

3. Land uses have been assigned so as to separate noise sensitive uses from noise corridors.

4. Implementation measures outlined in the Noise Element should be reviewed during development review for a range of noise-limiting solutions.

5. The Design Review process should consider noise attenuation features throughout the Plan Area, but particularly in noise-sensitive areas.

6. Hospitals, schools, and churches should not be allowed in noise corridors.

Geology, Seismicity, and Soils

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal C: The integrity of the environment, quality of air, water, and noise levels should be considered a priority in all development.

General Policies

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  b. Limiting extensive cut-and-fill grading of land which substantially changes the natural grade and watershed;

  c. Limiting modification of natural streambeds and flow;

  g. Prohibit lot configurations which do not provide for adequate and proper drainage.

Mitigation Measures

1. The Department of Public Works' review of development projects should provide specific measures at the time of development to alleviate drainage problems.

4. Nonbuilding setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds, should be observed as recommended by the County Health Department. (An intermittent stream is a stream that flows 6 months of a year or less; a lake is defined as having a surface area greater than 1 acre at its high water line; a pond is less than 1 acre in surface area.)

6. Impervious surfaces should be located so as to not adversely affect natural drainage.

The county Subdivision Design and Improvement Standards Manual (pages 2-3, 25-29, and 44-50, May 1986) establishes strict drainageway design and erosion control criteria which must be met by the development.

Hydrology and Water Quality

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

Community Goals

- Goal C: The integrity of the environment, quality of air, water, and noise levels should be considered a priority in all development.

General Policies

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  b. Limiting extensive cut-and-fill grading of land which substantially changes the natural grade and watershed;

  c. Limiting modification of natural streambeds and flow;

  g. Prohibit lot configurations which do not provide for adequate and proper drainage.

Mitigation Measures

1. The Department of Public Works' review of development projects should provide specific measures at the time of development to alleviate drainage problems.

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6. Impervious surfaces should be located so as to not adversely affect natural drainage.

Vegetation, Wildlife, and Aquatic Resources

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

General Policies

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  a. During the development, discourage cutting and removal of trees six inches in diameter at breast height other than necessary to place and service structures on a lot or to protect structures against possible damage from a diseased or hazardous tree.

b. Limiting extensive cut and fill grading of land which substantially changes the native grade and watershed.

c. Limiting modification of native streambeds and flow.

Mitigation Measures

Vegetation

1. Building setbacks should be established along watercourses in accordance with county ordinance.

2. Riparian areas should be maintained in a native state. Where alteration is proposed, the department of Fish and Game will be notified.

4. Developments having the potential of removing large numbers of trees should be reviewed by qualified individuals in the field of forestry to make recommendations on which trees could be removed in order to maintain a healthy residual stand.

Wildlife

1. Riparian communities should be protected through the establishment of building setbacks.

2. The Department of Fish and Game should be notified if any stream alteration is proposed.

3. Removal of vegetation will be discouraged in certain areas in order to retain representative stands of native vegetation.

4. Large lot zoning and low density land uses are proposed in areas with significant wildlife habitat.

Hydrology and Water Quality

4. Nonbuilding setbacks of 100 feet from perennial streams; 50 feet from intermittent streams; 150 feet from lakes; and 100 feet from ponds, should be observed as recommended by the County Health Department. (An intermittent stream is a stream that flows 6 months of a year or less; a lake is defined as having a surface area greater than 1 acre at its high water line; a pond is less than 1 acre in surface area.)

The following mitigation measure is required by state law.

- A DFG 1601-03 Permit (Stream or Lake Alteration Agreement) shall be obtained to construct creek crossings and alter streambeds. This permit could contain additional mitigation measures.

Cultural Resources

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals, policies, and mitigation measures.

General Policies

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  f. Limiting the removal or destruction of historical sites.

Historical Preservation

- Policy 1: Significant historical sites located within the Plan Area boundaries shall be protected. Upon application for a development, historical sites shall be identified and a means by which they will be protected shall be provided.

Mitigation Measures

1. All development projects should be reviewed for cultural resource impacts in order to determine the existence of historic and prehistoric sites.

2. A records search should be performed in order to establish and document cultural resource sites in areas not previously searched.

3. Development projects with identified sites should be protected with recommendations made by a qualified archeologist, anthropologist, or other qualified professional.

4. Areas not previously surveyed should have an archeological field survey performed by a qualified archeologist in cooperation with the California Archaeological Inventory Information Center. Identified sites shall be preserved through recommendation of an archeologist.

Aesthetics

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF Area Plan goals and policies:

General Goals

- Goal B: Local planning efforts should include an integrated, comprehensive community plan that ensures functional, healthy, and aesthetically pleasing land uses.

General Policies

- Policy 13: The county shall establish a design review procedure to review construction design, landscaping, and architectural considerations under a design control district for industrial, commercial and multi-family zones.

- Policy 14: The physical setting in the Plan Area shall be protected in the proposal review and approval process by:

  a. During the development, discourage cutting and removal of trees 6 inches in diameter at breast height, other than necessary to place and service structures on a lot or to protect structures against possible damage from a diseased or hazardous tree.

Energy

Mitigation Measures Required by County Policy. The following mitigation measures are incorporated by the EDH-SF goals, policies, and mitigation measures.

General Goals

- Goal J: Efficient energy usage and conservation should be consistently encouraged in development.

Mitigation Measures

1. Considerations will be given to solar opportunities in subdivision development and other intensive land uses. A minimum of 80 percent of proposed lots or units should be provided with solar access.

4. State residential building standards requiring conservation and cost effective construction will offset energy use.